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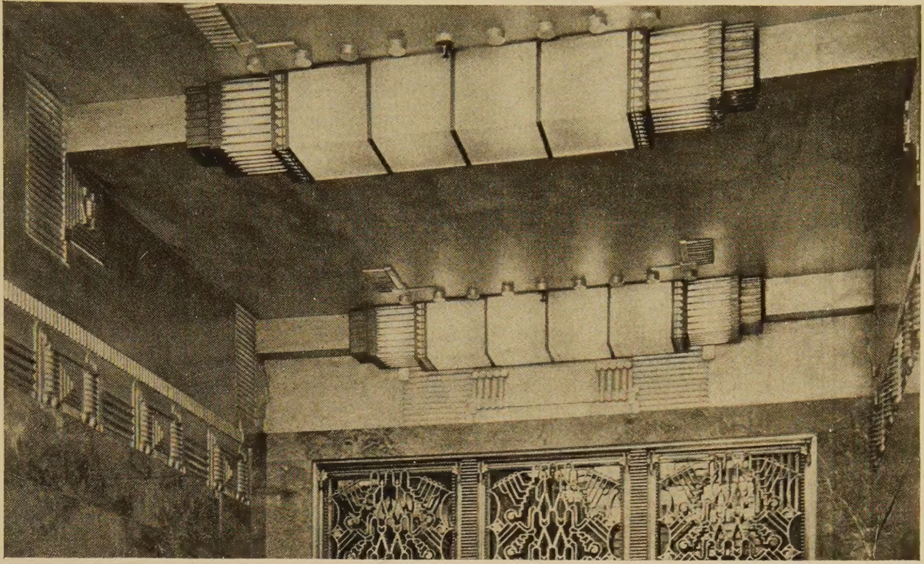


Integral fixtures in an elevator lobby of an office-building. The firm of Ely Jacques Kahn, architects

Lighting Fixtures of To-day

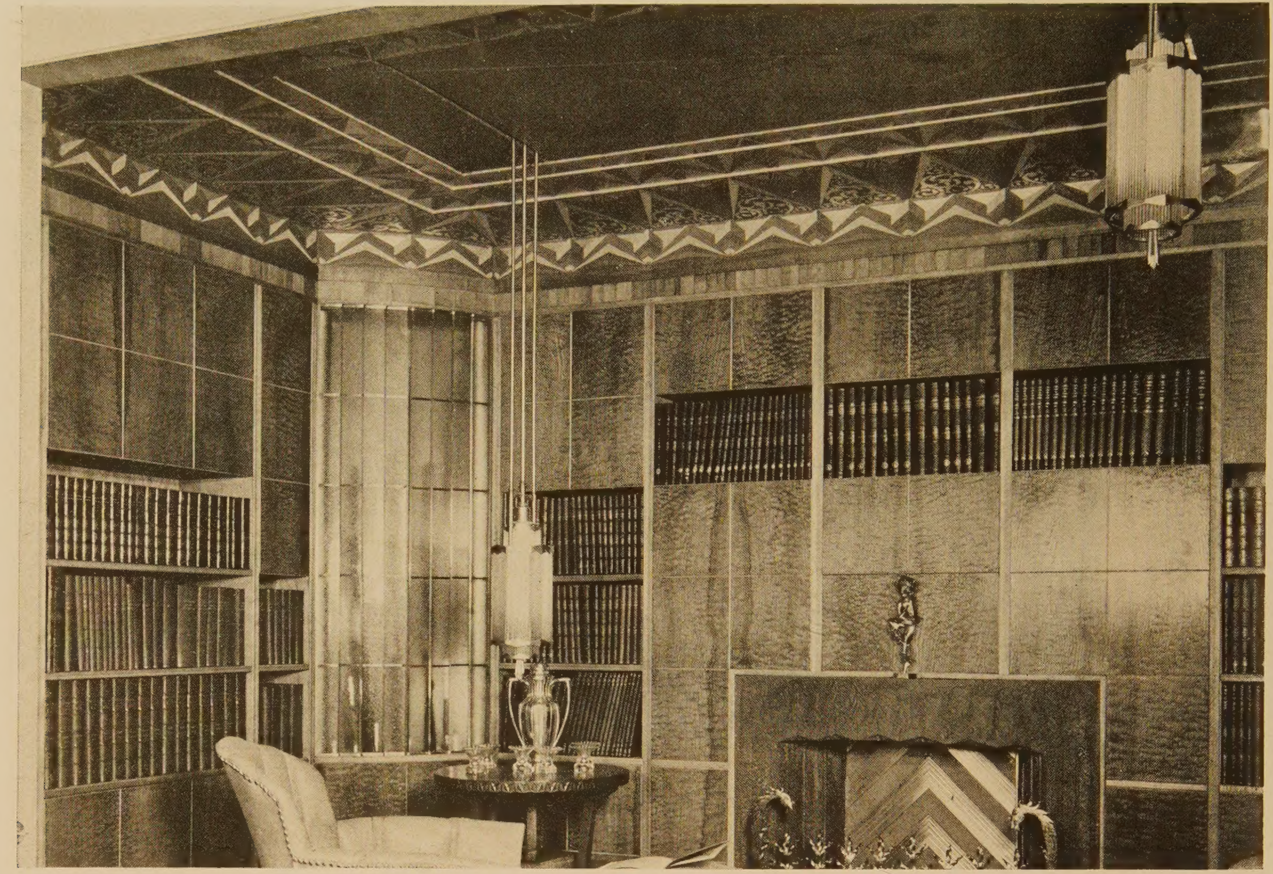
By R. W. Sexton

WE have recently marked with appropriate ceremonies the fiftieth anniversary of Thomas A. Edison's invention of the incandescent lamp, and yet the majority of architects, designers, and illuminating engineers still seem to think that the greatest opportunity which the harnessing of electricity as a means of artificial lighting presents lies in the electrifying of gas and candle fixtures and oil lamps. They recognize at once that electricity means more light and even greater convenience in lighting, but, instead of looking at it as a new and therefore a modern *method* of lighting, they see it merely as a modern substitute for gas and candles.

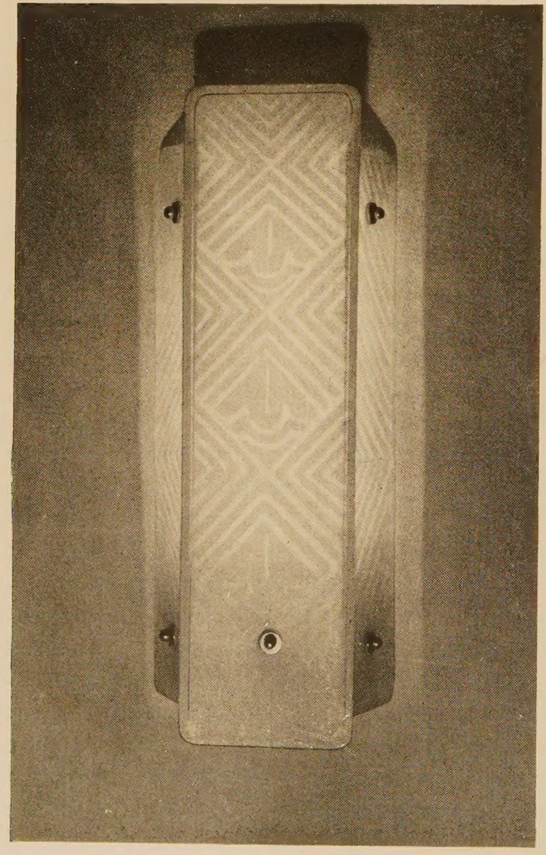
While gas was an improvement over candles and oil lamps, it still depended on the open flame as its source of light; as a result there was bound to be a certain similarity between the design of the gas fixtures and the old candle holders. Naturally, wherever there is a flame, as there is when burning oil, candles, or gas, there are certain conditions which must be met in the design of the fixtures. The very fact that electricity has eliminated the flame and that its source of light is a sealed glass bulb suggests opportunities in the design of lighting fixtures that we have never before even thought possible.

Personally, I like to think that electricity affords the opportunity to discard the lighting fixture. For the old-fashioned lighting fixture, while it often had an intrinsic value of its own, has always seemed to me to be a sort of discordant note on a wall and ceiling. It was never possible, with gas, for example, to design a fixture that had any relation to the architectural treatment of a room. And the peculiar thing is that during the last fifty years no effort has been made to benefit from the opportunities which electricity has made possible in this respect. Even electric bulbs are manufactured in forms to imitate the flame of a candle.

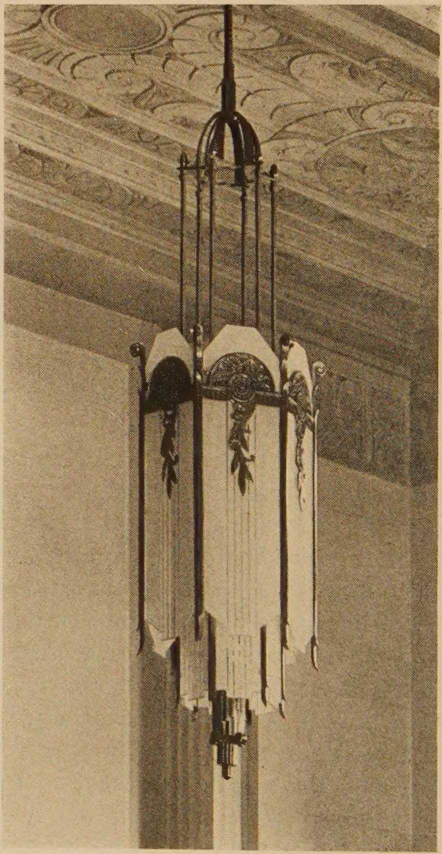
As I see it, then, electricity affords us the opportunity to design the lighting unit—which I think is a better word than "fixture"—as an integral part of the architectural treatment.



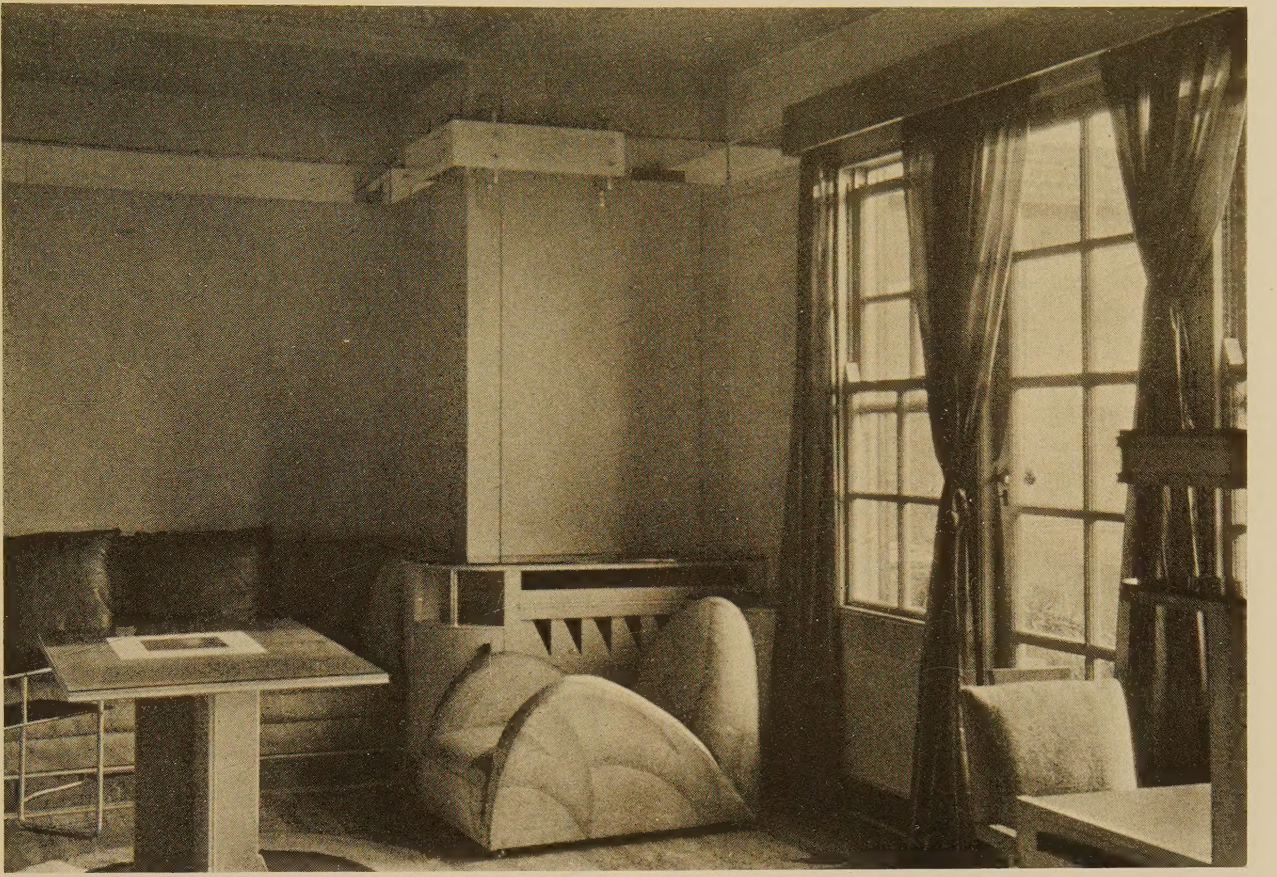
Fixtures adjustable to height and location in a man's study in a country house. Of bronze in pewter finish, with dimming switch at bottom. Ralph T. Walker, architect. Executed by Sterling Bronze Company



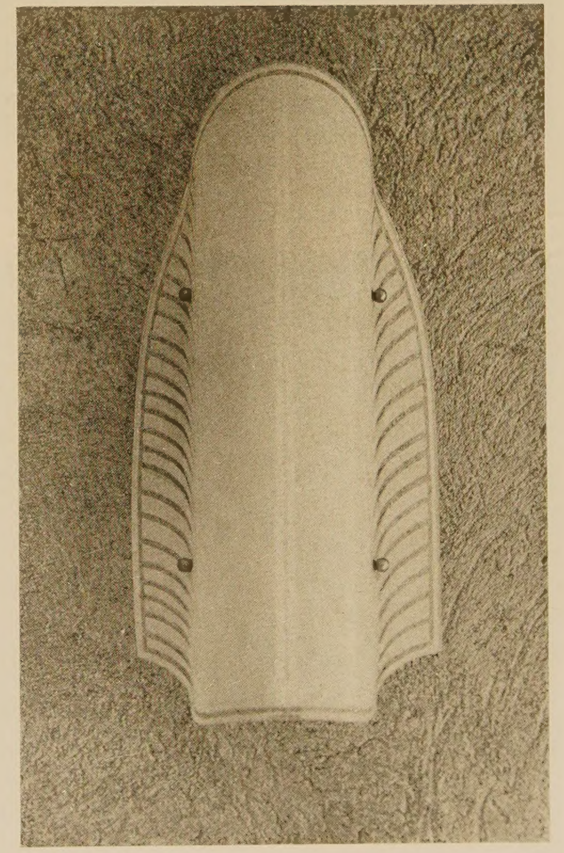
Side-wall bracket of glass that has been painted and fired. Designed and executed by Maurice Heaton



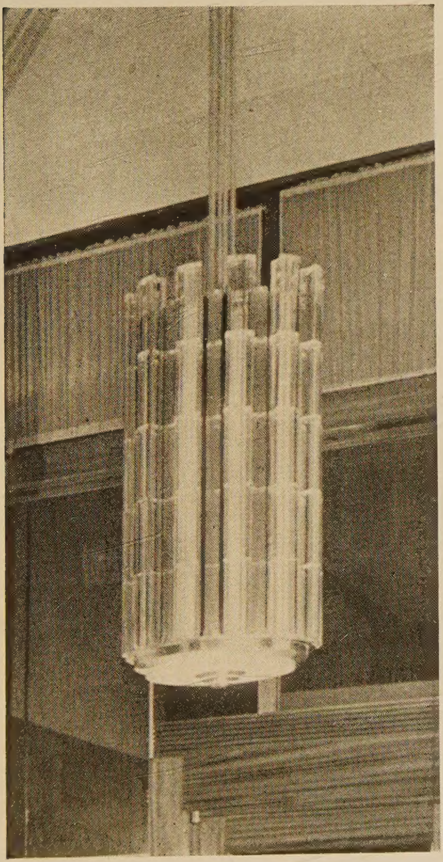
Lighting fixture in a banking-room. Executed by Sterling Bronze Company



Continuous integral lighting in a London apartment. Easton & Robertson, architects



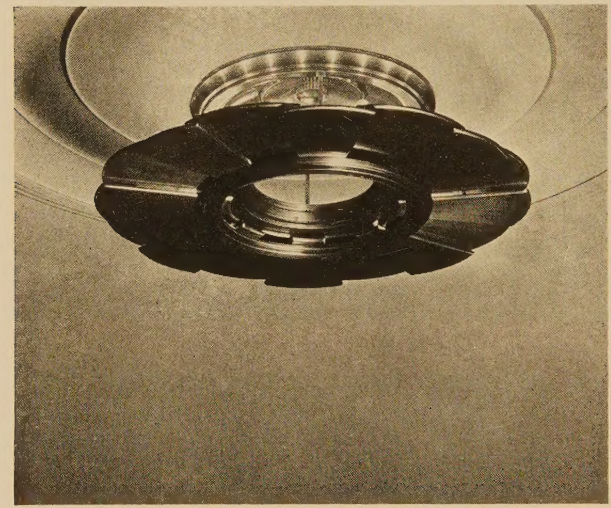
Side-wall bracket of curved glass painted and fired. Designed and executed by Maurice Heaton



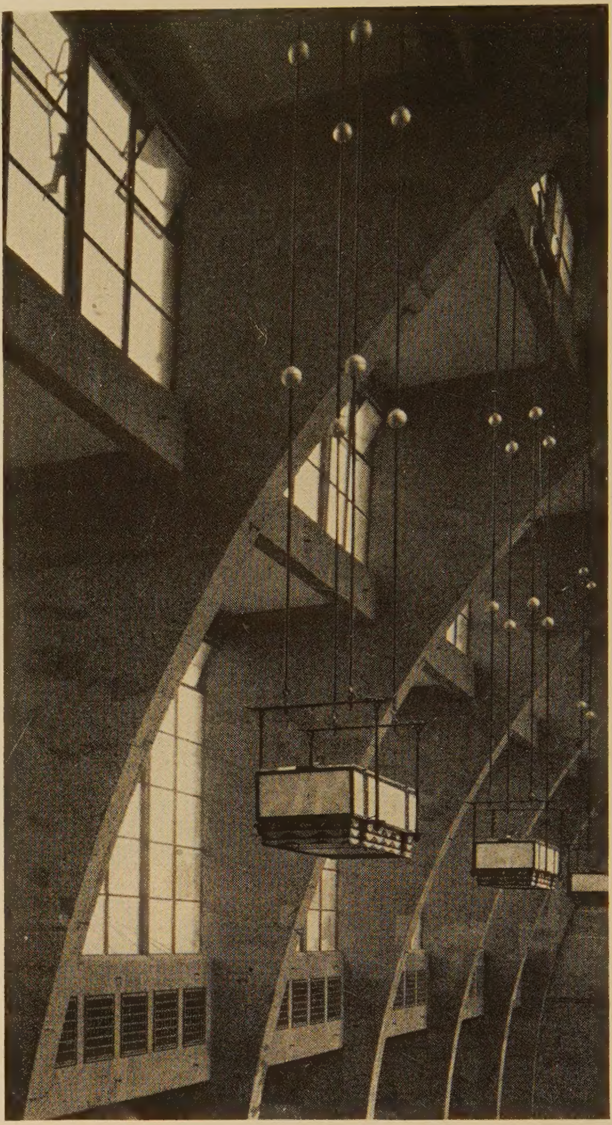
Hanging fixture of silver and crystal in a jeweler's showroom. The Firm of Ely Jacques Kahn, architects. Executed by Kantack & Company

And by that I mean that the architectural design will be developed so that certain elements of the composition may be so constructed that electric bulbs or continuous tubing may be introduced, concealed by glass or so placed that they are not visible, and yet afford light for the room.

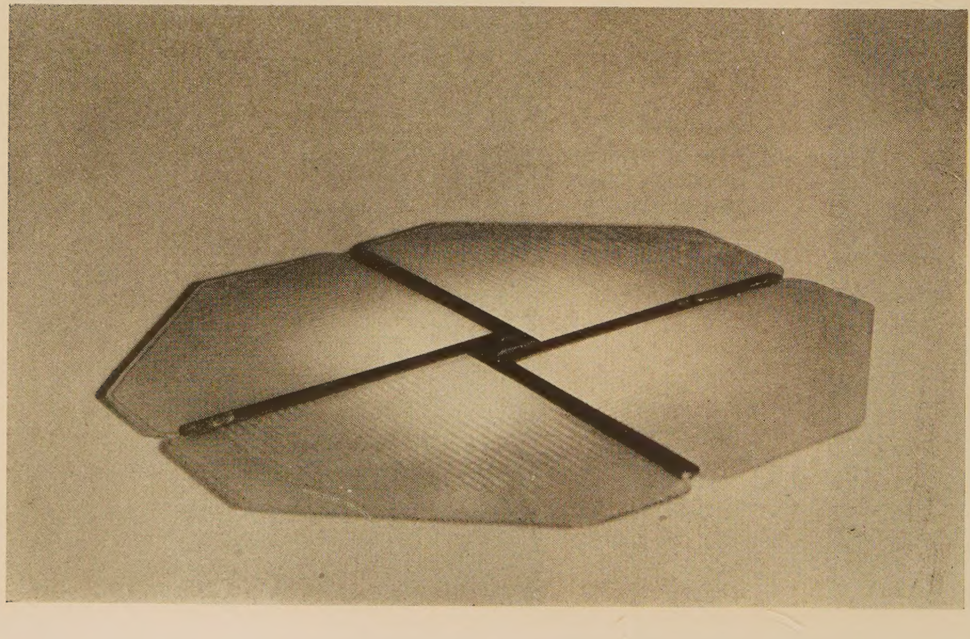
The intensity of the light from an electric bulb creates certain difficulties in the design of lighting units. The light is so strong that the glare must in some way be eliminated. This was the basis on which indirect light was based. The greatest fault with indirect light, as it is generally devised, is that it really wastes so much light. There are certain rooms, however, in which it can be used to advantage, with the



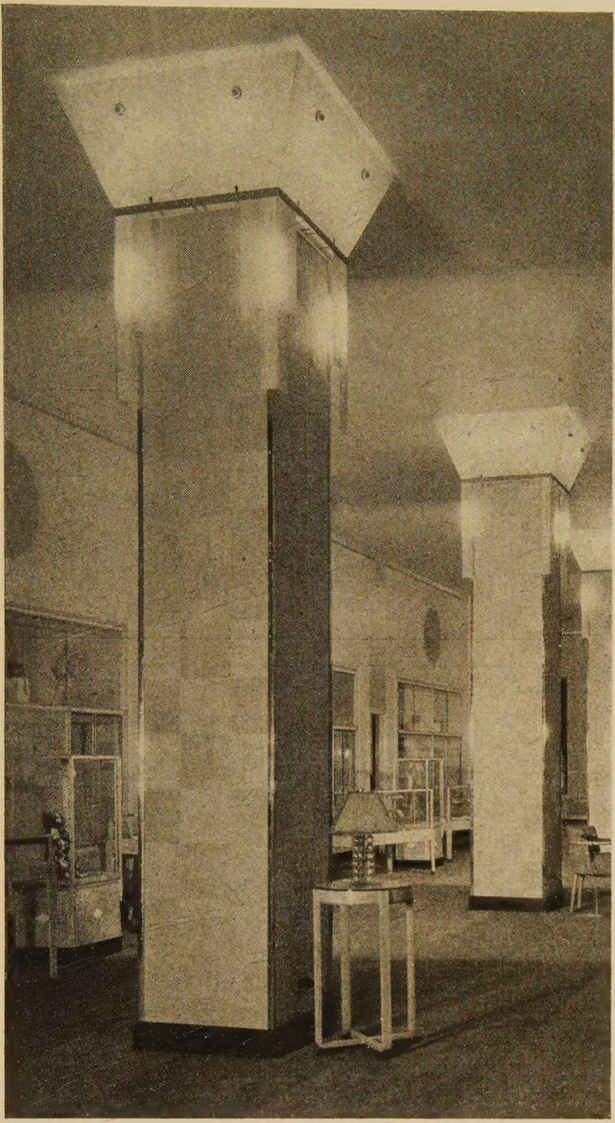
A ceiling fixture of aluminum, effecting a complete shading of the source. French & Company, decorators. Executed by Kantack & Company



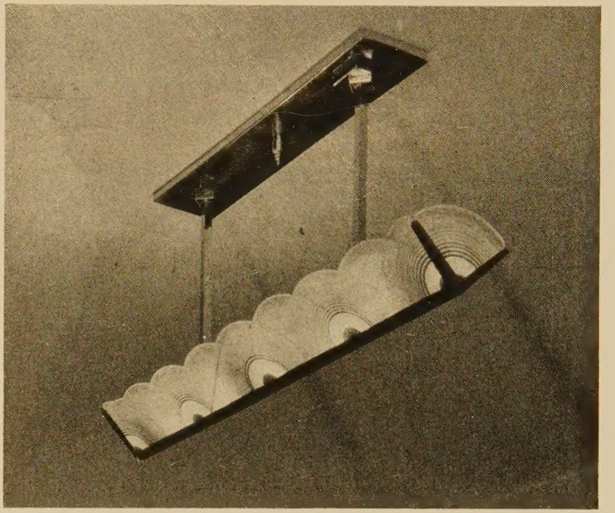
Hanging fixtures of metal and glass in the Royal Horticultural Hall, London. Easton & Robertson, architects



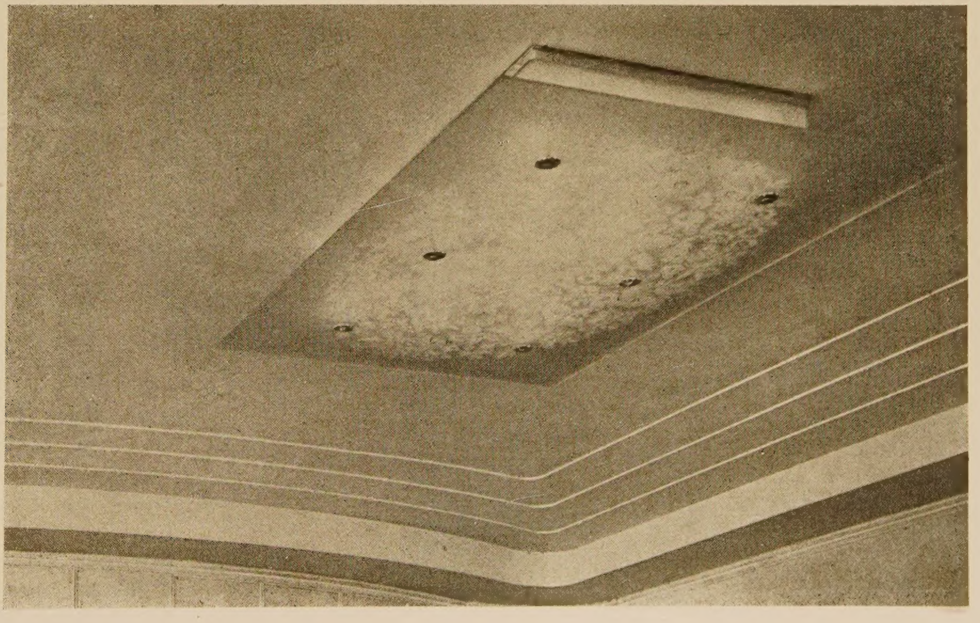
Flush ceiling fixture of metal and glass, the bulbs being countersunk. Designed and executed by Maurice Heaton aid of desk lamps where intense light is needed. In the banking room of the new building of the Title Guarantee and Trust Company, New York City, John Mead Howells, the architect, has introduced an especially interesting and successful scheme of indirect lighting. The bulbs are concealed in metal troughs suspended from the ceiling. The light is thus thrown directly upon the ceiling and from there is reflected to the room below. The ceiling is finished in silver, allowing a greater reflective factor, and, except for occasional desk lamps, no additional light is required. In the entrance lobby of the new Chrysler Building, the indirect system is also used, the reflecting surfaces being light marble. There is nothing in the room that



Utilizing a column for integral lighting, in Saks Fifth Avenue, Chicago. Holabird & Root, architects



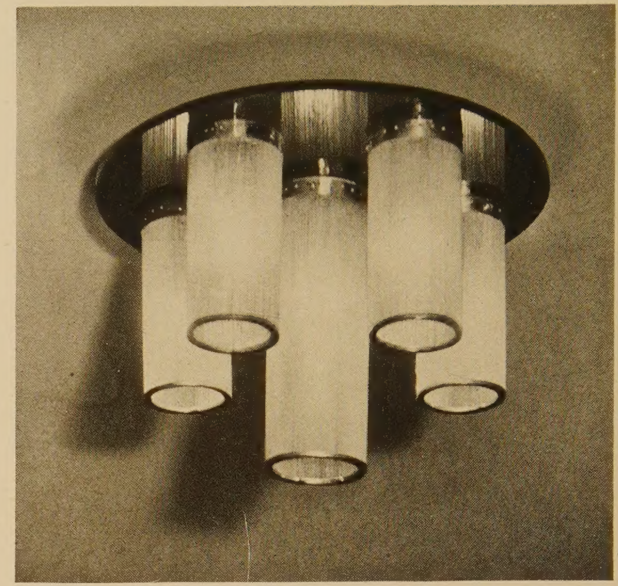
A ceiling fixture of bright metal with painted and fired glass disks. Designed and executed by Maurice Heaton



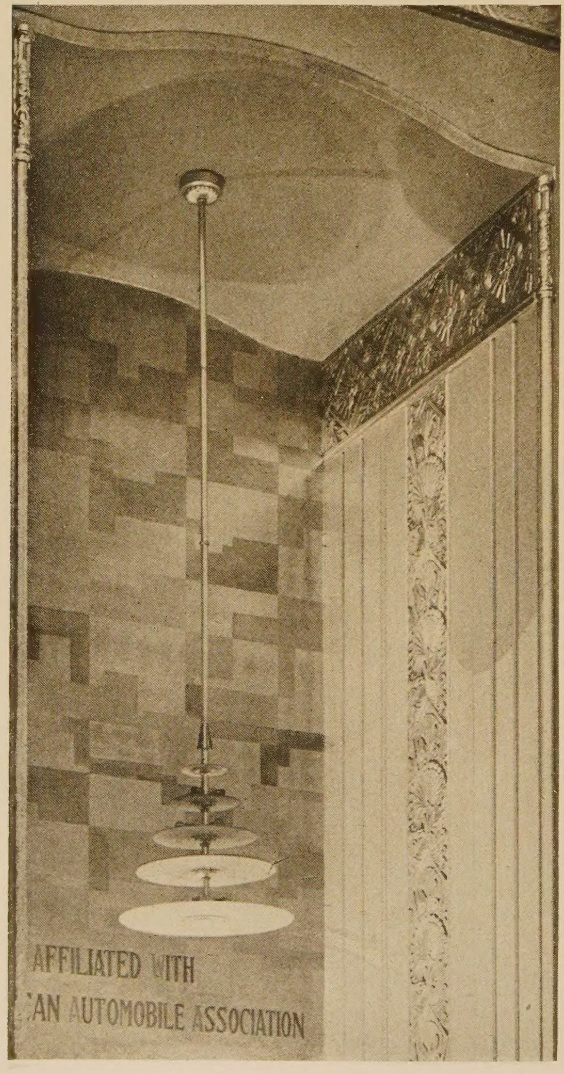
Ceiling fixture of carved glass in the salesroom of Yardley & Company, New York. The Firm of Ely Jacques Kahn, architects. Executed by Kantack & Company can in any way be called a "lighting fixture." The bulbs are hidden behind metal strips which are placed vertically in such a way that they are really a part of the decorative scheme.

General speaking, it might be said, however, that the best method for eliminating glare without losing too much light is to cover the bulbs in such a way that the rays of light are diverted. Ornamental glass in relief, either plain or frosted, and glass cut into strips and tied together, offer possibilities for shading the light without materially reducing its intensity. On account of the irregularity and unevenness of the surface thus obtained, the rays of light when passing through the glass are broken up and distorted, thereby eliminating the glare, but losing little if any light.

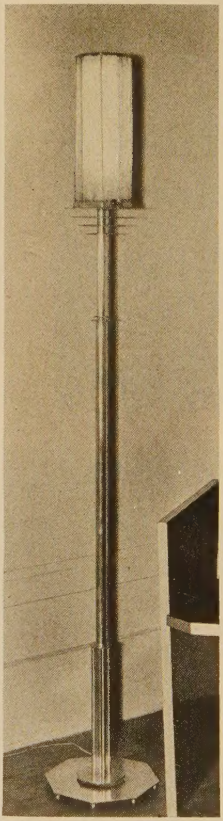
Many so-called modern lighting fixtures base their claim for modernism on the fact that the arm of a bracket is ornamented by a geometric pattern instead of an acanthus leaf. This is



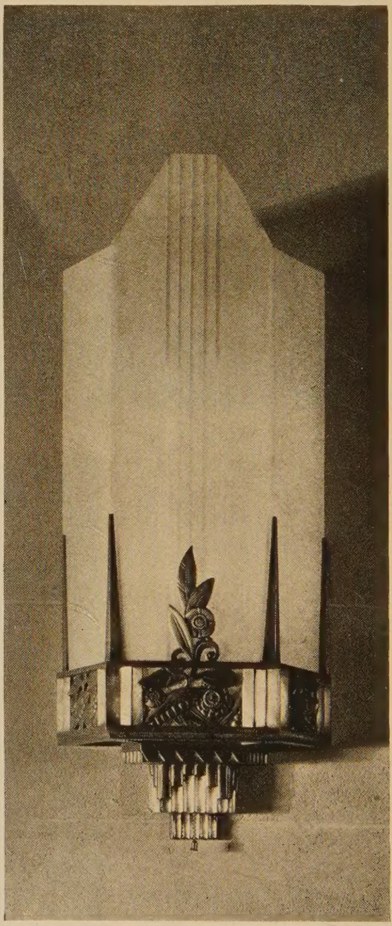
The cylinders are made of narrow strips of glass bound together, rough edges radially, in metal frames. Designed and executed by Maurice Heaton



Ceiling fixture in the Automobile Club, Chicago. Holabird & Root, architects



Standing lamp of brass with cylinder of glass strips. Designed and executed by Maurice Heaton



Side-wall bracket in a banking-room. Executed by Sterling Bronze Company

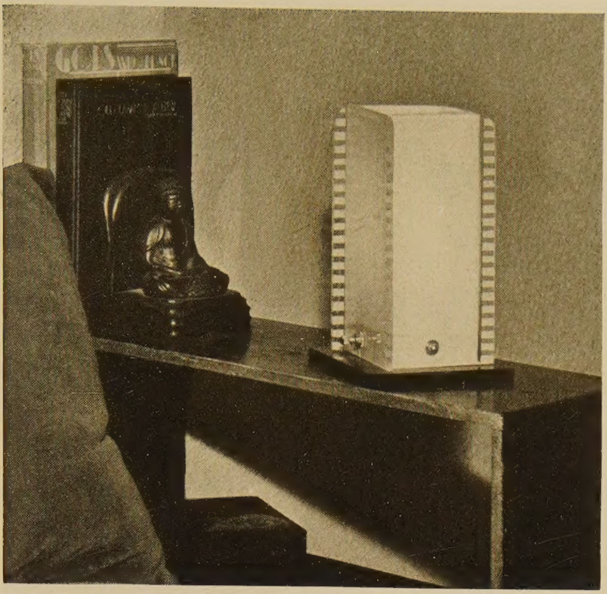
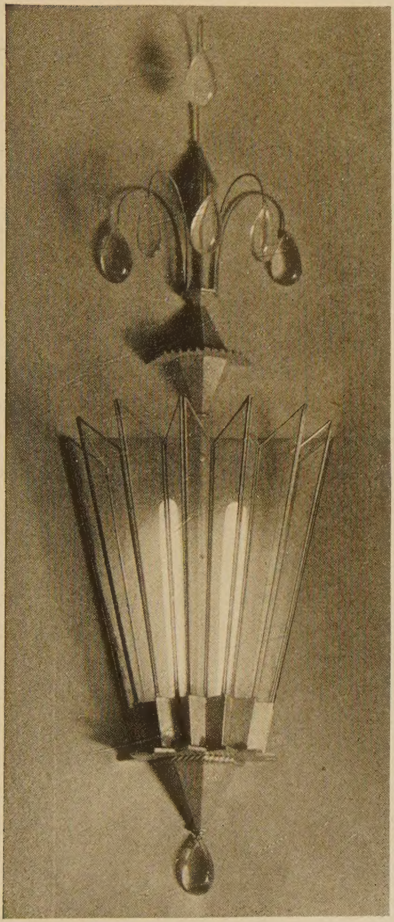


Table lamp of glass painted white and fired. Designed and executed by Maurice Heaton

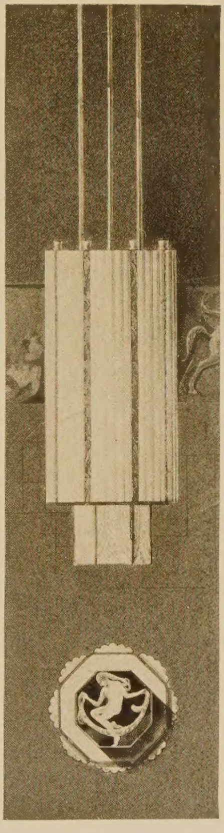
true, too, of much of our modern architecture.

A new style is based on a new means of structure. Our skyscrapers are distinctive in their design because they are constructed by a method that was developed in this generation. Similarly, a new method of lighting inspires us, or ought to inspire us, to new ideas in lighting arrangements. If we feel that because a room that we design bears certain evidence of old Colonial or early English architecture, and must therefore have in it only lighting fixtures that were used in those days, we have then merely another problem in archæology. But, if that is the case, why not omit the electricity altogether in that house, using lighting fixtures made to burn candles?

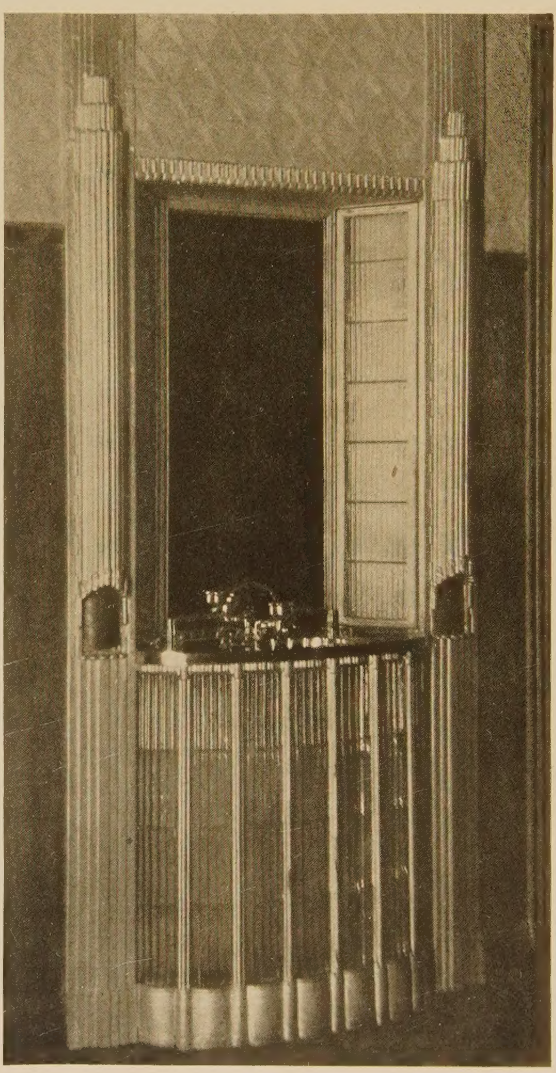
Walter W. Kantack stresses the point that a designer should take advantage of every practical idea of illumination in the development of units that shall possess artistic and decorative qualities. "During the past twenty-five years,



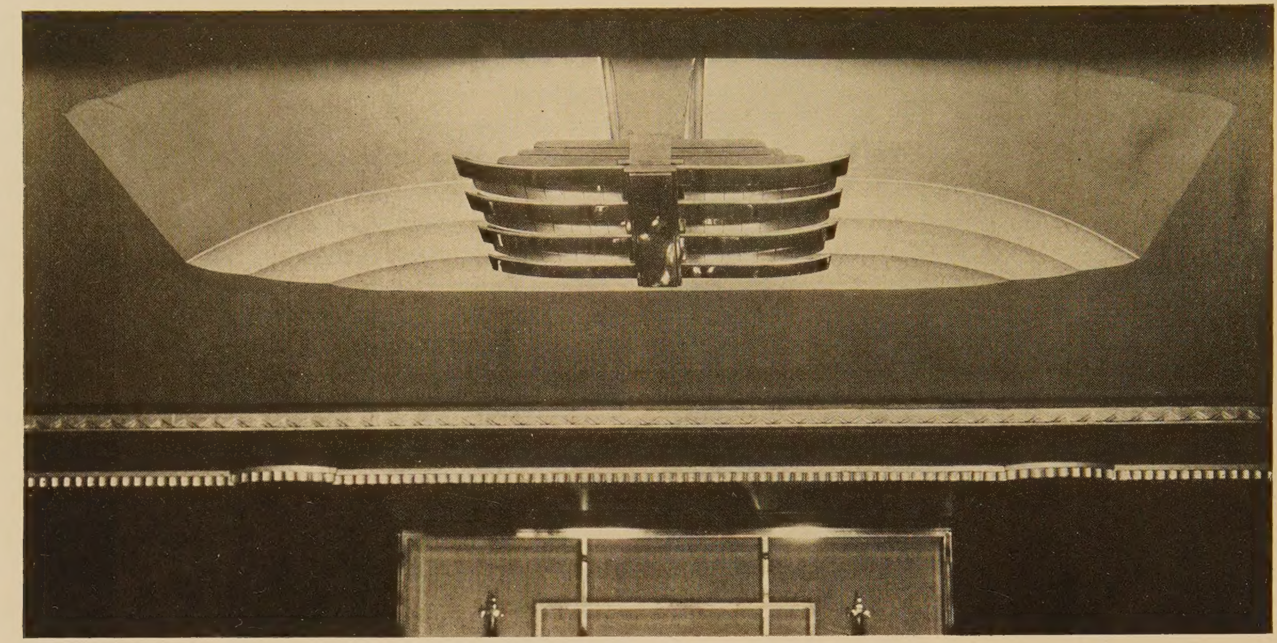
Side-wall bracket of metal with glass and crystals. Designed by Julius Davidson



Winning design in a Beaux Arts Institute competition. Designed by Cox, Nostrand & Gunnison



Box-office window lighted behind moulded glass. Ralph B. Bencker, architect

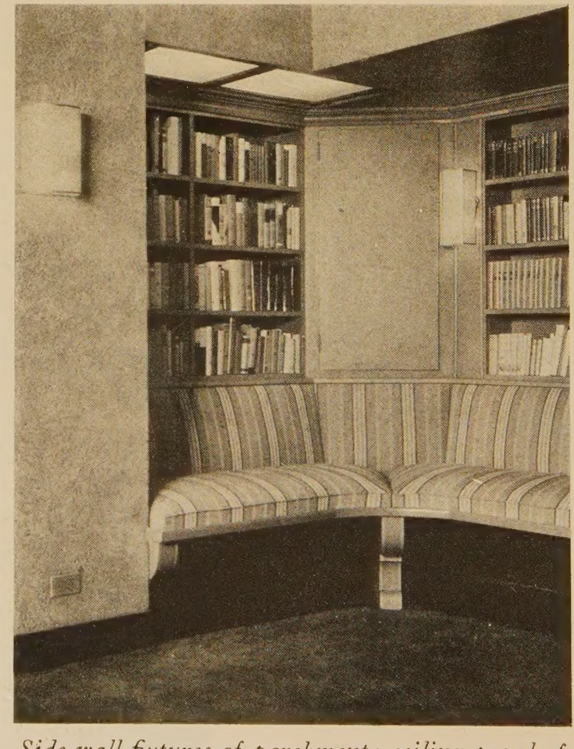


Ceiling fixture of sheet aluminum in which the reflected light is concentrated within a sinkage. French & Company, decorators. Executed by Kantack & Company

research carried on in electric laboratories revealed countless opportunities for obtaining volume and control by means of electric lighting equipment. For many years the designers and manufacturers of so-called artistic lighting fixtures looked upon the activities of the illuminating engineer as an intrusion upon their domain. The time has come, however, when the lighting fixture man must recognize these scientific contributions toward the conquest of darkness, and apply them intelligently in his endeavor to achieve works of artistic merit."

Walter K. Harrison, of the firm of Corbett, Harrison & McMurray, architects, stressed a similar point in an address he recently made before a group of illuminating engineers. He stated that the progressive architect to-day looks for advice from the illuminating engineer in the development of schemes of lighting, just as he seeks the advice of the structural engineer regarding details of the construction of a skyscraper.

Let us, then, take full advantage of the opportunity afforded us. Let us co-operate with the illuminating engineer. Let both of us exercise our creative abilities. We have spent twenty-five years studying the periods of the past. We certainly must have learned from them something of the principles of design. And nowhere amongst those principles, as I have studied them, can I find anything that approves of employing new materials and new methods to imitate old ones. If, in our minds, the possibilities of electricity begin and end in the electrified candle, then we had better give up expecting to develop a modern style of architecture that will be recognized by future generations as distinctly twentieth-century American.



Side-wall fixtures of parchment; ceiling panel of glass. Designed by Lucian Bernhard

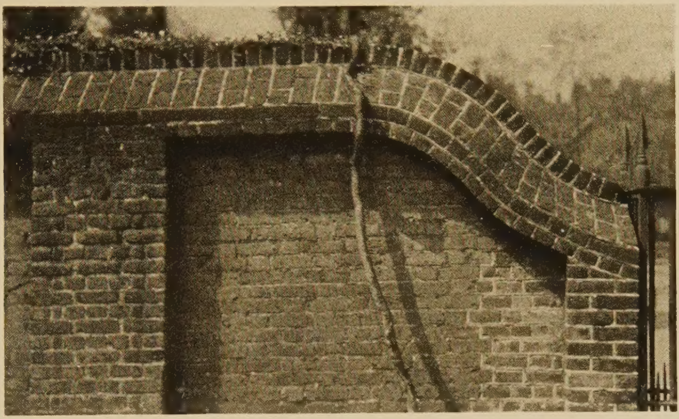
Close-up Studies of English Brickwork

By Kenneth Edmunds

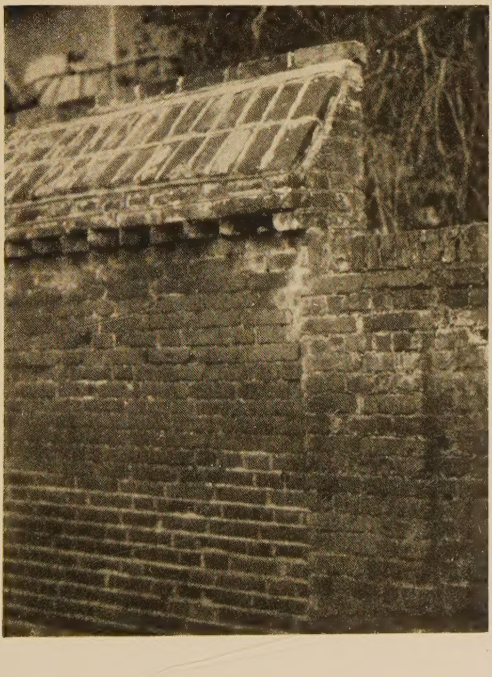
THE architectural wayfarer in England is usually as unfailing in his enthusiasm for old brickwork as he is despondent over attaining similar effects in America. Within an area of a square yard of one brick there will be amazing variations of weathering, ranging from bluish cerulean tones to vermilions, yet all in complete harmony. Vegetable growths, from brilliant green moss to fiery splotches of lichens, produce natural embroideries, while in America nothing more than an occasional patch of timid pleurococus can be expected from nature.

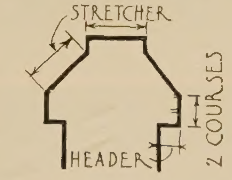
The more brick walls which delight the itinerant architect's color sense, the more firmly he concludes that the damp weather of England is responsible for weathering variations, and consequently, the success of the brickwork. The more impressive color becomes, the less the actual brick-forms and their handling are observed. Yet only superficially is the success of English brickwork a result of mere age and climatic conditions. An analysis of bromide photographs (which nullify color) discloses a variety of simple bonds, a freedom of handling, and a study of relating joints to bricks, too often lacking in present American brickwork. The manner in which modern architectural

A common type of brick coping in East Anglia, which effectively makes use of ordinary brick in a way which is far less expensive than the same profile of stone

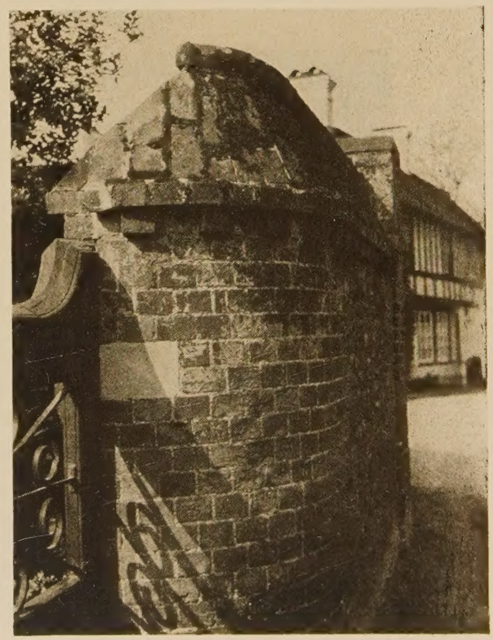


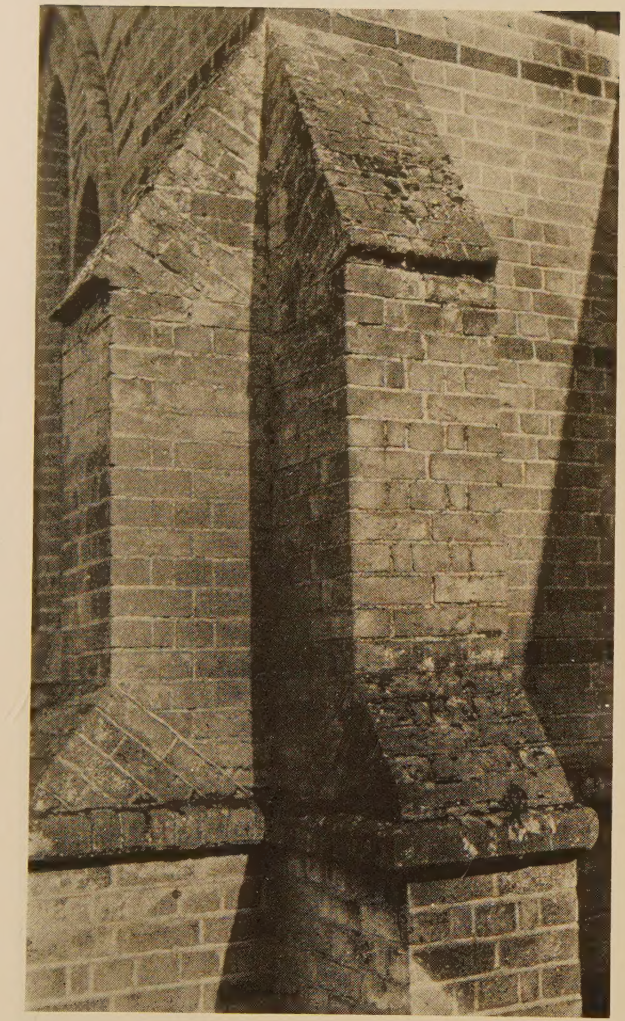
A favorite type of brick coping (Twyford-Henley road), which eliminates both the cost and color contrast of stone, and permits of harmonious unity



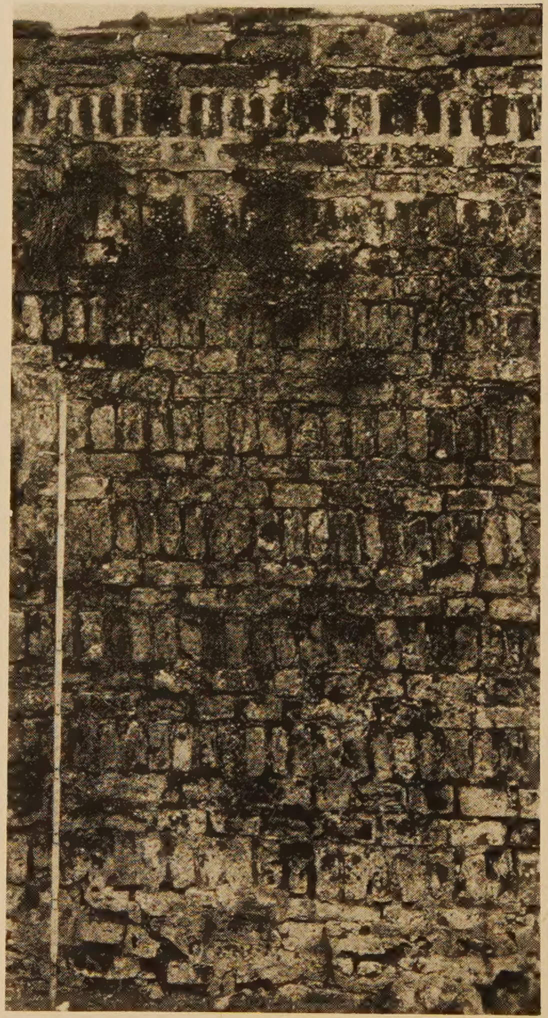


A virile ten-inch wall which employs a brick coping rather than the more common stone. Note that the faces of piers are flush with the outer vertical face of coping

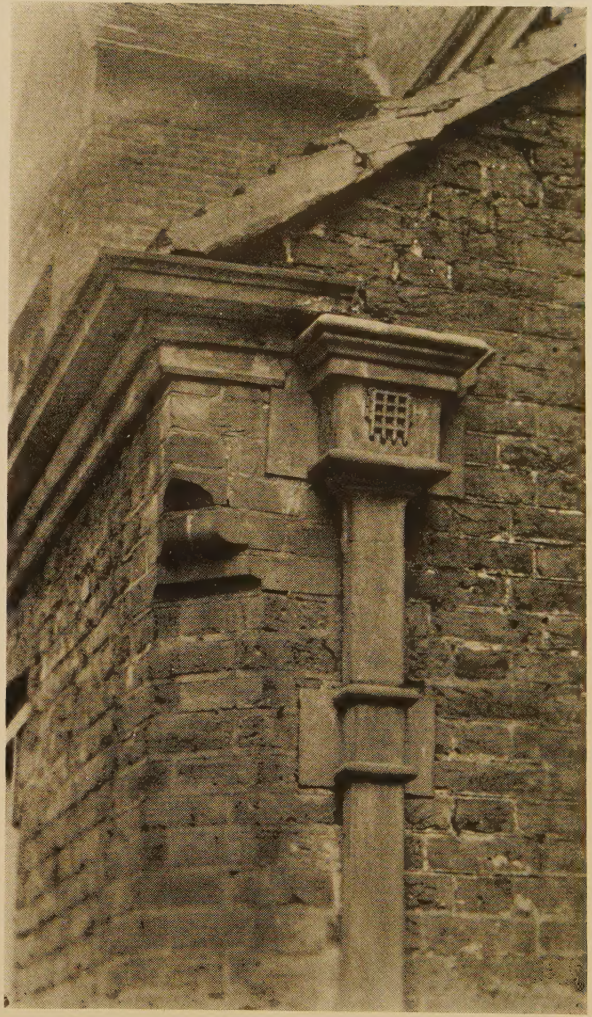




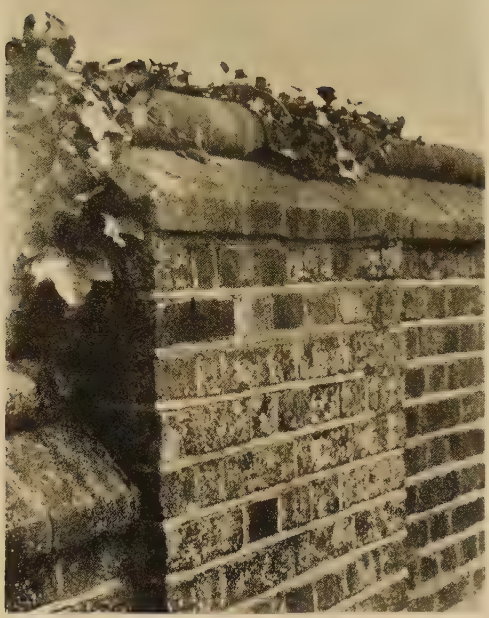
Tilting the brick at right angles to the sloping faces of the buttresses on this little church at Shurlock Row, Bucks, is not only sound engineering, but leaves a smooth outer face which saves the cost of a stone cap



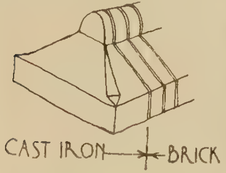
This interesting version of an 8-in. garden wall, at Levenham, extends stretchers from one face of the wall to the other. The wall is 8 feet high (note 5-ft. rule at left), and has been sufficiently strong to last several centuries



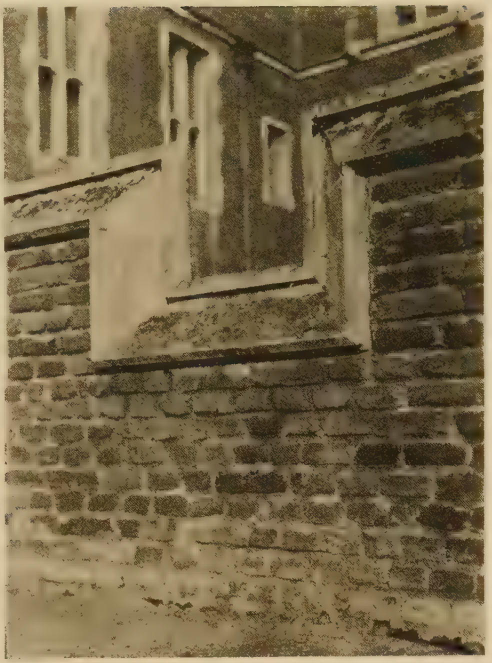
This Hampton Court detail follows the wide-spread English fondness for cutting off a corner at 45 degrees, and capping it by a becoming corbel. Joints are exceedingly thin, and trowel-scored horizontally



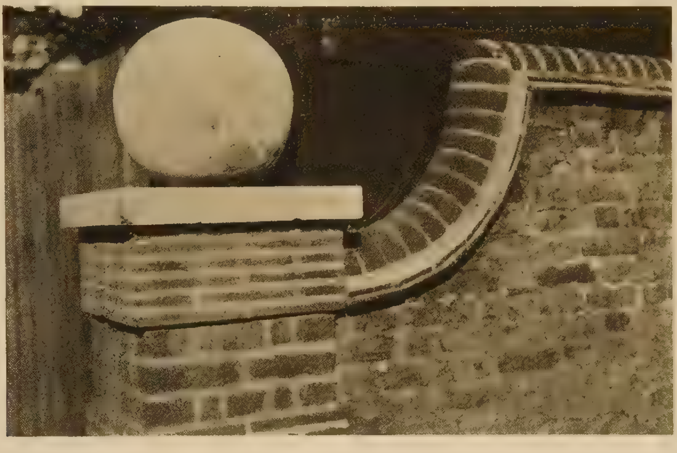
The problem of preventing the corner unit of a wall coping from cracking away is solved here at Clifton Hampton by making it of cast iron (see sketch above) and matching the brick color



Corner corbel in photograph at left



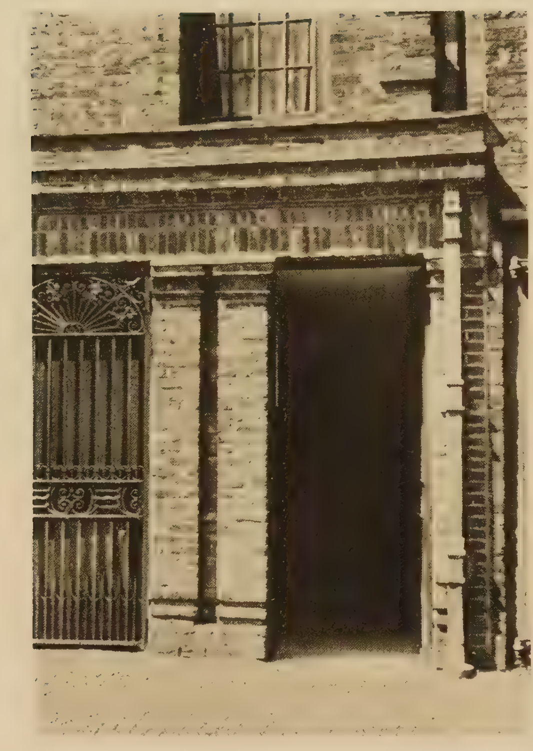
This Hampton Court parapet wall, with its mellowed variety, is sufficient argument to make all "skintled" and other bizarre walls cry to be covered with stucco. Note the non-vertical joints



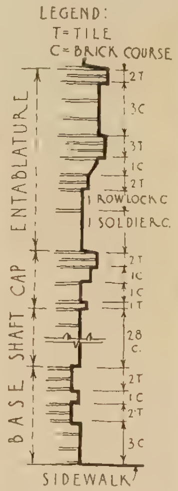
This pier in Chelsea Park Gardens varies traditional forms by incorporating tile about 1 x 9 in. The joints of the pier are frankly wider than those of the wall

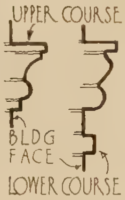
practice is conducted has practically eliminated any experimentation in brick and mortar at the job. In most offices brickwork consists of so many parallel black lines ruled on white paper or tracing cloth, with a certain bond and joint-width specified; an allowance of so many dollars-per-thousand governs the selection of the brick. The designer may conscientiously study documents in a library and consult his notes made in travel, but under the above conditions if his handiwork reproduces the mellow quality of English brickwork, he is indeed fortune-favored. Parallel lines on paper and meticulous specifications may serve to produce the best railroad tracks in the history of the world, but they cannot be expected to reproduce or excel old English brick artistry.

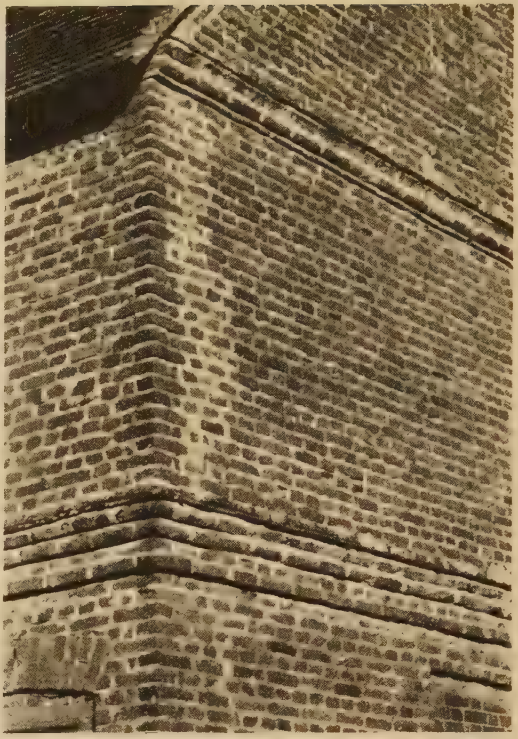
The problem of how an architect can obtain sympathetic effects with modern brick, average masons, and the usual client, is one with strangely contradictory components. There are numbers of good brick on the market, possessing in fair measure the same sizes and qualities as old ones. There are brick masons who are craftsmen and who can intelligently reproduce a sample wall which has been approved. Clients, too, there are, with a nice appreciation of first-class masonry. But the difficulty is that one of these three factors is usually lacking. Not only that, but the architect who is to receive only eight per cent commission for a house has already spent too much in time, overhead, sketches, working drawings, and supervision to be able to experi-



This richly moulded effect on Mount Row, London, utilizes only one special course. Detail at upper centre





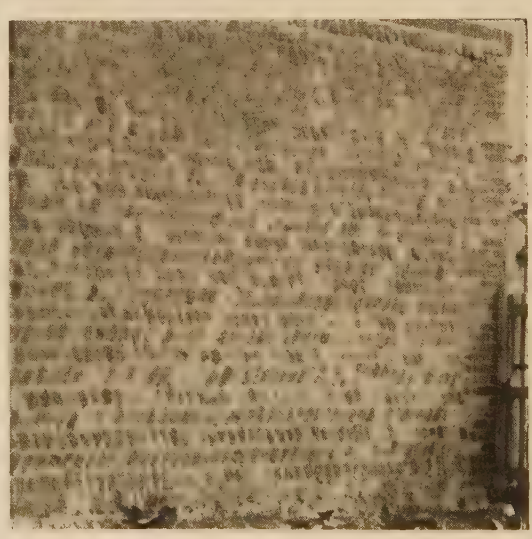


Only three special courses are used here (detail at lower centre) at Old Basing. Brick courses are 2 in.; joints, ½ in.

ment with brick and mortar, however much he would like to do so. Too often his only recourse is to set up panels in his office consisting of two dozen sample bricks, with composition strips or wads of wrapping paper to simulate joints—and this after the working drawings and details are completed and dimensioned.

Ideally there should be time to study the brick fabric of a building as carefully as those more favored details, such as entrances and cornices. In mere point of area, the composition and color of a building's brick should have equal consideration with the small units, which hold the attention only intermittently. The general (and perhaps subconscious) impression made by a brick building cannot be favorable unless there is present: color variation which is pleasing and harmonious, joints well related to bricks in color and width, and a general pattern or introduction of occasional features of interest. Often too, foreign brickwork has had such admirable texture, bonding, and cornice or band-course corbeling, that after generations of painting it is still exasperatingly charming.

In present-day architecture, be it sanely modern or aspiringly *moderne*, brick used as brick should take advantage of past usage. Only the puerile designer scoffs at the experience of the past, and imposes useless experimentation costs upon his client. The able manipulation of simple bonds, the varied employment of headers in copings and cornices, the introduction of flat tile in forming piers and entablatures, the use of ground and moulded brick—all these and more should serve the alert designer.



This departure from the usual method of bonding at Nayland is best suited to garden walls which are decorative rather than load-bearing. Only full-length stretchers are used

The Modern Movement in Architecture

By Rayne Adams

It has been my good fortune to be present at many discussions among architects relative to architecture, ancient, mediæval, and modern. The following dialogue records a discussion which may be considered representative.

—THE WAYFARER

* * *

The Wayfarer. Some time ago I happened to be in Labrador or Greenland or wherever it is that Eskimos live. I made the acquaintance of an Eskimo who practised architecture. Yes, sir, practised architecture. He had a sign over the door reading: *arajutsiva.* He said it was Eskimo for architect and——

Locutor 1. But that isn't Eskimo; it's Greek. Anybody who——

The Wayfarer. Maybe it is; maybe it isn't. Maybe the Eskimos were originally Greeks, although, if we believe the archæologists, their discovery of the dome would link them up with the Romans. Anyway he was an architect. He had a drawing-table made of a block of snow and he was drawing on thin sheets of ice with a walrus tooth. And, while he paused in the course of the afternoon's work for tea and blubber, he relaxed into a discussion of modern architecture. I have brought him with me to-night. Permit me to present Mr. Kagsasuk.

The Eskimo. Avat.*

The Wayfarer. He says that art is eternal and that he knows its secret. It is the circle.

Locutor 2. Interesting but not conclusive. What about the systems of rectangles, rhythmic diagonals, and——

Locutor 3. Everybody knows that any system of mathematics applied to architectural design is forcedly an *a posteriori* application. Suppose one *does* find that a pineapple grows like a watch spring—admitting even that the pineapple *is* a watch spring, that doesn't make it beautiful.

Locutor 4. That is quite right. But the success of a formula must be based on something more definite than such crass parallels. I was the discoverer of the law of Ovo-architecture. I am impressed with the idea that the Greeks who built the Parthenon had the same law to guide them that I pursue (The Ovo law) instead of the law given by Vitruvius . . . which in truth is no law at all, but the results of measurements made by a rule formed from the diameter of the columns . . . called modules. . . . A law, if I understand the term aright, must be something which, by an evolution of its principles, obtains a positive result or mathematical reality.

The Eskimo. Assâsakâk!

The Wayfarer. He means mineral oil; you see they have no bananas in Lapland.

Locutor 5. I take it that even in a discussion of the basic propositions of architecture we should observe the proprieties. I have always felt that just because modern plumbing wasn't invented in 1620 (the year my ancestors founded the colonial school of architecture), levity concerning the grape arbor motif has always been unjustified. Propriety is of the essence of good architecture. It is a law just as surely as is the law of Ovo-architecture which our friend has mentioned and which he has had the sagacity to leave undefined. Propriety limits the use of the spire to a religious building. It would be just as beautiful on an outhouse but for the impropriety.

Locutor 1. Propriety, balance, proportion, taste, style, scale, rhythm, function. Gentlemen, this superb collection of abstract nouns needs no verbs or qualifying adjectives to convey their significance. We all know what they mean. Our only difficulty is that we can't tell anybody.

Locutor 4. There are always the dictionaries and glossaries of architectural terms to——

Locutor 6. I believe that we shall not arrive at the bottom of things unless we throw overboard every conceivable definition of the past and start over again. Of course the person to start with is myself; the idea, which is fundamental, is mine. I will explain it to you. Many years ago the celebrated Jeremy Bentham put forward his theory of Utilitarianism. Whatever was useful was good. He didn't paint any pictures or design any buildings, but he could have if he hadn't been too busy. He had the right formula. Of course Bentham thought he was talking about a system of morals; to-day

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* "The peculiarity of the Eskimo language is . . . (that) one word is able to express a whole sentence including subordinate sentences." 'The Eskimo Tribes.' Doctor H. Rink. London 1891, p. 37.

A design for a Romanesque villa, conforming to the Ovo law of architectural proportion

we know that what he did was to lay the foundations for the justification of art.

Locutor 5. That is also interesting but not conclusive. Would you go so far as to subscribe to the dictum that whatever is good must be beautiful? And if you admit that would you proceed further and admit that Truth is Beauty? Thus, in some such way, the Useful becomes the Beautiful? God is love; love is evolution; evolution is God? . . . I mean, thinking along these lines, if you get what I mean.

Locutor 7. Remember that evolution is given in terms of *function*. A building is like a crawfish. Everybody knows that the exterior appearance of a crawfish expresses its function. You simply can't imagine the function of a crawfish being expressed by the exterior of a jackrabbit. In architecture one must always search to express the function.

Locutor 3. But a crawfish is a crawfish. A library isn't always a library.

Locutor 4. As I was pointing out when I was interrupted, I have a law of architectural proportion, discovered by us some years ago, which I have found unfailing in designing and executing work, giving our buildings, wherever carried out, a fulness and beauty of proportion found nowhere save in the Greek examples. With it Mansard roofs cease to be box-like in appearance and houses have the appearance of being worth twice or three times their cost.

The Eskimo. Epiagâ!

The Wayfarer. He says that——

Locutor 4. Never mind what he says. Look at what he's doing!

The Wayfarer. Merely a local custom among the Eskimos showing disapprobation. He will expound his own theory of art shortly and that will set him right again.

Locutor 6. I have listened to this discussion and I can see where you are all wrong. I am not sure about our friend, Mr. Kagsasuk. God gave him great courage. You are one and all concerned with the appearance of things. The modern movement in art does not concern itself with looks at all. It does not care whether we abandon or follow precedent nor is it interested as to whether the new rules of art are derived from the machine, nor even whether there are any rules at all. The modern movement in art means that you do whatever you damn please.

Locutor 3. Yes, but if you are doing what pleases you it must be that you exercise judgment. Would you go so far as to claim such utter variability and intangibility that you—or your friends—could not pigeonhole and classify your expressed preferences? And if these are not rules then Plato was wrong when he said thoughts were things.

The Eskimo. Avat ujorojivog.

The Wayfarer. He says that in designing his igloos he always does what he damn pleases, but he hasn't been able to get far away from the circle.

Locutor 2. That is because he thinks in terms of three dimensions. If he would consider the fourth dimension (which I invented and which isn't the fourth dimension at all) and think of his igloos as projected through space—just as my designs are generated—he would develop new forms which would be rhythmic, whether or not they were good looking.

Locutor 8. But those designs would not necessarily be practical, and all architecture must be practical and should be mechanical.

Locutor 1. Well, if you have an architectural problem to solve you don't go first to a hardware shop or a machine factory for inspiration.

Locutor 6. Why not? Suppose you were given a public library to design. Library—that means books. That means printing. That means machinery. Perhaps the *parti* for your building lies between the platens and the journals of some gigantic printing-press.

Locutor 3. Suppose you can't find that particular printing-press?

Locutor 7. Don't forget it is the *function* of the building which determines the design. Consider the functions of your public library. Its divinely ordained purposes are clear: It serves as a place for reading, idling, sightseeing, distribution of books, loitering, writing, eating (if there be a lunch room), and as a locus where Jack may meet Jill. It is evident, on the face of it, that no Renaissance façade can express these functions. The expression has simply *got* to be modern.

Locutor 6. Moreover it is of no consequence what your library looks like provided it looks like a library.

The Eskimo. Iangaroq.

The Wayfarer. He wants to know who will tell him what a library *should* look like.

Locutor 6. I say that nobody knows what it looks like. My position is pragmatic. With William James I ask: Will it work? Will it turn out the books?

Locutor 1. Are you designing a library or a printing-press?

Locutor 6. Either or both; it makes no difference. The public that looks at it will soon be dead anyway.

Locutor 3. That accords well with Marcus Aurelius who, even if he wasn't in the arts, seemed to work some things out. He said that his doctor had looked at a lot of dead people and then died himself. Yet the eulogies pronounced upon all of them, I am sure, read pretty much alike.

Locutor 2. Proving?

Locutor 3. That the forms of things pass but that the language describing them remains. The cave man used the same phrases in describing the charm of the jaw-bone over the entrance to his cave as the modern interior decorator uses in describing a metal chair which has the aspect of an octopus returning from a German beer festival. Aunt Susan's whatnot and her——

The Eskimo. Tipâpog. Kulumaipuk.

The Wayfarer. He shows you this picture of an igloo. The design offends him. He wants to know whether the flat roof shows the influence of the modern machine movement in art.

Locutor 6. It does. For centuries the romantic sentimentalist and the artistic genius, with his capacity for giving infinite pain, have been in the saddle. Now we have the modern movement——

Locutor 1. And I suppose none of our modern buildings give you a pain?

Locutor 6. Not so fast. Pleasure and pain don't enter into it. We simply look at a modern building and say: "Well, there's another one." The sentimentalist architect starts out in his saddle to build a railroad station. What does he build? Another Baths of Tiberius Cæsar. What might he have done? He might have built something which looked like a nameless shame. And it might have been good-looking, too. Do you know what the unforgivable sin is? You don't? Well, nobody does. The author of the phrase forgot to define it. Yet we can guess at it.

Locutor 2. You mean that the architect of the station might have *guessed* at what the station was to look like?

Locutor 6. No, I mean that he would have

A village of igloos. The task of the Eskimo architect is greatly simplified by reason of the fact that his plan is always the circle, while any elevation is just half of that. Incidentally he works with but one material, and that not too enduring built a station that would make everybody else guess what it was. He would know because he designed it. Nobody would be able to say: "Why, that looks like the Baths of Tiberius or like the Palace of Versailles."

Locutor 1. How would he know that he had a railroad station when he got through?

Locutor 8. Well, although I have been a listener and not a contributor to this discussion, it seems that it is time for me to clear up the whole matter for you gentlemen. I will say that this railroad station would be full of regulating lines and that these lines are an assurance against capriciousness. . . . Of course the *choice* of the regulating line is one of the decisive moments of inspiration; it is one of the vital operations of architecture. . . . Here are the regulating lines which have served to make very beautiful things and which are the very reason why these things are beautiful.

"He shows you this picture of an igloo. . . . He wants to know whether the flat roof shows the influence of the modern machine movement in art."

Locutor 3. If the regulating lines are a matter of individual choice, what guarantees the regulating they are supposed to produce? Moreover, suppose you have a good-looking building and can't find the regulating lines?

Locutor 8. Well, you buy a book (I have published one) just as you would buy a "Complete Letter Writer," when you needed to write to your sweetheart's father asking him to lend you fifty dollars. In this book you will find rectangles and diagonals, arcs and parallel lines, all classified. You can probably tree your regulating lines this way.

Locutor 4. Proportion, I mean in the artistic sense of the word, is playing, as it were, tunes with angles, curves and lines in such a manner that they will . . . impress the beholder with the sentiment you wish awakened.

Locutor 1. Exactly. Yet if it is true that proportions vary to harmonize with varying environments, no rule of absolute proportion will be valid. A fifth root diagonal may make a pleasing or an unpleasant façade according as it expresses a square or a rectangular plan, of a building in a crowded square or upon an isolated hilltop, to house a jail or a summer hotel, in the feudal or in the late Japanese style of architecture.

The Eskimo. Assâgakâk. Nanuk.

The Wayfarer. He says that sounds like the Eskimo version of the apocalyptic vision of St. John. He says he understands it and approves of it.

Locutor 8. I can understand that our friend Mr. Kagsasuk might have difficulty with diagonal lines since his circular plans afford him little opportunity to use diagonals, whether of the fifth or any other root. This difficulty is taken care of by my regulating lines. To illustrate this I show you this design. This villa of small dimensions, seen in the midst of other buildings erected without a rule, gives the effect of being monumental and of another order.

Locutor 4. That is true, although I don't see any of the other buildings. This residence of mine, now, is different. Its plain surfaces are made to give to the beholder great beauty, every size having been strictly calculated by the Ovo law of architecture. The musical ratios are perfectly adhered to, varied by perspective position, which ever and anon pleases those beholding the structure.

The Eskimo. Iangavoq.

The Wayfarer. He says the two buildings look pretty much alike to him.

Locutor 3. Well, you recall what Hugo says: "Supreme art is the region of equals. There is no primacy among masterpieces."

Locutor 1. We seem to have covered the field of architecture and its basic principles pretty thoroughly, although I have a feeling that we all could add much to what we have said. I fancy, moreover, that we are pretty much of the same mind that things being what they are cannot be otherwise, or, if that is not a proper characterization of our common philosophy, I may say that it would seem that our interest in the modern movement in art should be based on the understanding of a subject which, having no rules or styles, leaves us free to decide for ourselves, whether it has any existence at all.

The Eskimo. Isog. Qaggaipog.

The Wayfarer. He says he's going back to Greenland to search for the South Pole.

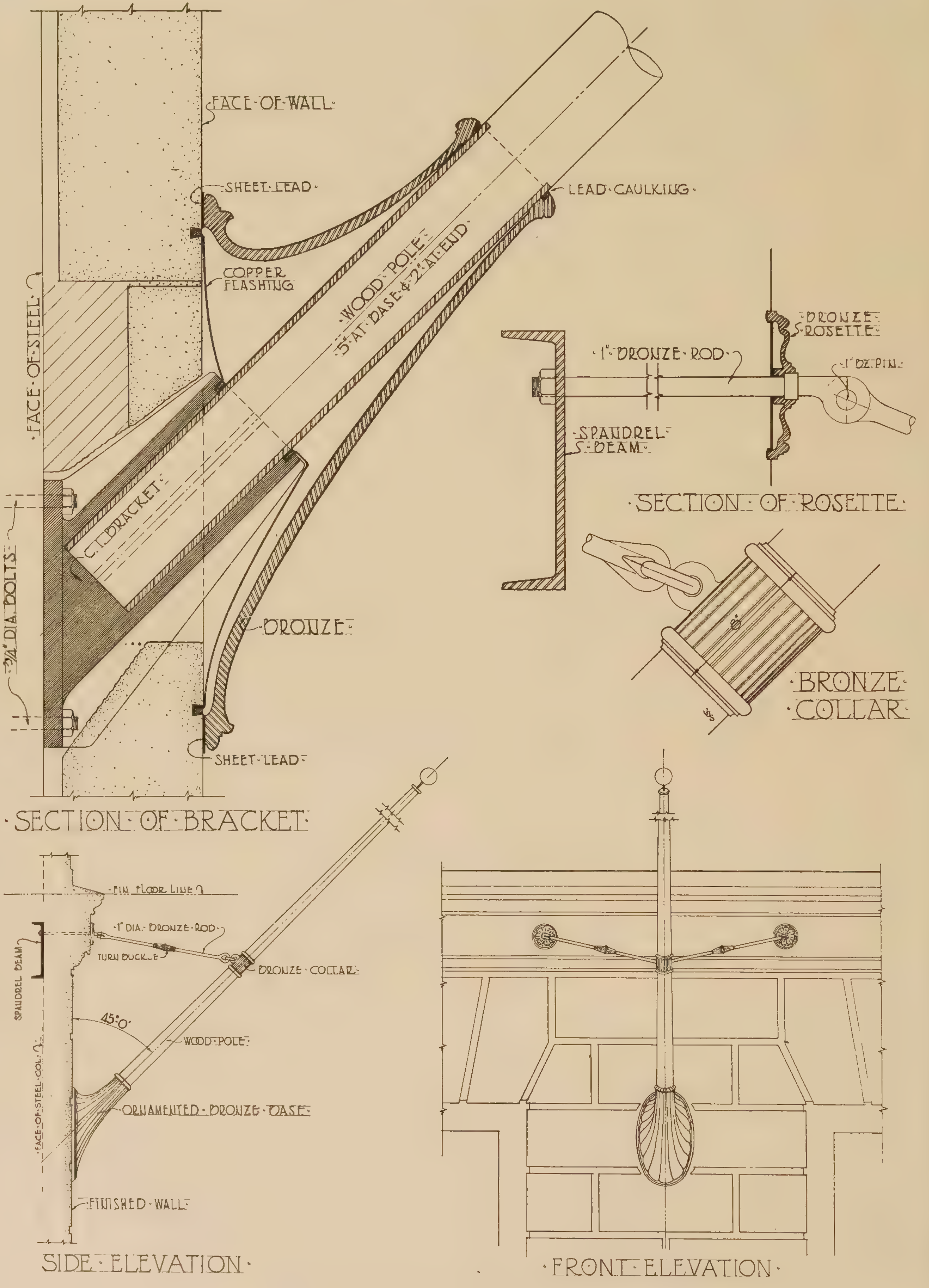
NUMBER I
IN A SERIES
OF

Working Drawings

By John G. Stewart

This series, in which one drawing will appear each month, is designed to cover the smaller practical problems that confront the architect in his day's work. The subjects chosen are those which, while not uncommon, call for some experience and knowledge of approved solutions. Next month the subject is Radiator Enclosures.

ARCHITECTURE
CHARLES SCRIBNER'S SONS



SECTION OF BRACKET

SECTION OF ROSETTE

BRONZE COLLAR

SIDE ELEVATION

FRONT ELEVATION

DETAIL OF FLAG POLE ON AN EXTERIOR WALL

0 3 6 9 1'0" 2'0" 3'0"

0 1" 2" 3" 4" 5" 6"

SHEET No ①

BOOK REVIEWS

AMERICAN AIRPORT DESIGNS. 96 pages, 9½ by 12½ inches. Illustrations from drawings. Paper boards. New York: 1930: Lehigh Portland Cement Company. $3.

Reproductions of forty-four drawings submitted in a recent airport competition. There is included an analysis of designs by Archibald Black of Black & Bigelow, Inc., air transport engineers.

LUMBER, LATH, AND SHINGLES. Compiled in co-operation with the Department of Agriculture Forest Service. 23 pages, 6 by 9 inches. Washington: 1930: U. S. Government Printing Office. 5 cents.

MODERN FRENCH DECORATION. By Katharine Morrison Kahle. 219 pages, 7 by 9 inches. Illustrations from photographs and diagrams. New York: 1930: G. P. Putnam's Sons. $3.50.

The author, who is Extension Lecturer in Interior Decoration, University of California, presents the case of the modern French decorative arts with understanding and with a real enthusiasm.

THE SKYSCRAPER. A Study in the Economic Height of Modern Office Buildings. By W. C. Clark and J. L. Kingston. 164 pages, 6 by 9 inches. Illustrations from graphs and diagrams. New York: 1930: American Institute of Steel Construction, Inc. $2.

Mr. Clark, the economist and vice-president of S. W. Straus & Company, and Mr. Kingston of Sloan & Robertson, architects, have been working upon the subject of this book for several years. The main factors entering into the tall building have been severally considered—economics, public health, public safety, and traffic congestion. Their findings show some particularly interesting relationships, not only between height and cost, but between economics and land values.

LIGHT. By Lawrence Veiller. 29 pages, 6 by 9 inches. Pamphlet binding. New York: National Housing Association Publications: 1930. 50 cents.

A reprint from proceedings of the Twenty-first National Conference on City Planning, 1929.

PROMOTING NEW HOTELS. When Does It Pay? By W. I. Hamilton. 158 pages, 5½ by 8 inches. Illustrations from graphs. New York: 1930: Harper & Brothers. $2.50.

The author is Director of Operations, Florida Associated Hotels, Inc. Recent years have brought a new complexity to the problem of the hotel and its relation to the community. Over-expansion and over-enthusiastic plans for financing have proven a real handicap in the development of the hotel industry.

NEW BUILDING IN THE WORLD. Edited by Joseph Gantner. Three volumes, written in German. Printed in Germany. Vienna: 1930: Anton Schroll & Company.

RUSSIA, by El Lissitzky. 103 pages, 9 by 11 inches. Illustrated from drawings and photographs. Paper boards, M. 12.50; linen boards, M. 15.

AMERICA, by Richard J. Neutra. 163 pages, 9 by 11 inches. Illustrated from drawings and photographs. Paper boards, M. 17.50; linen boards, M. 20.

FRANCE, by Roger Ginzburger. 132 pages, 9 by 11 inches. Illustrated from drawings and photographs. Paper boards, M. 15; linen boards, M. 17.50.

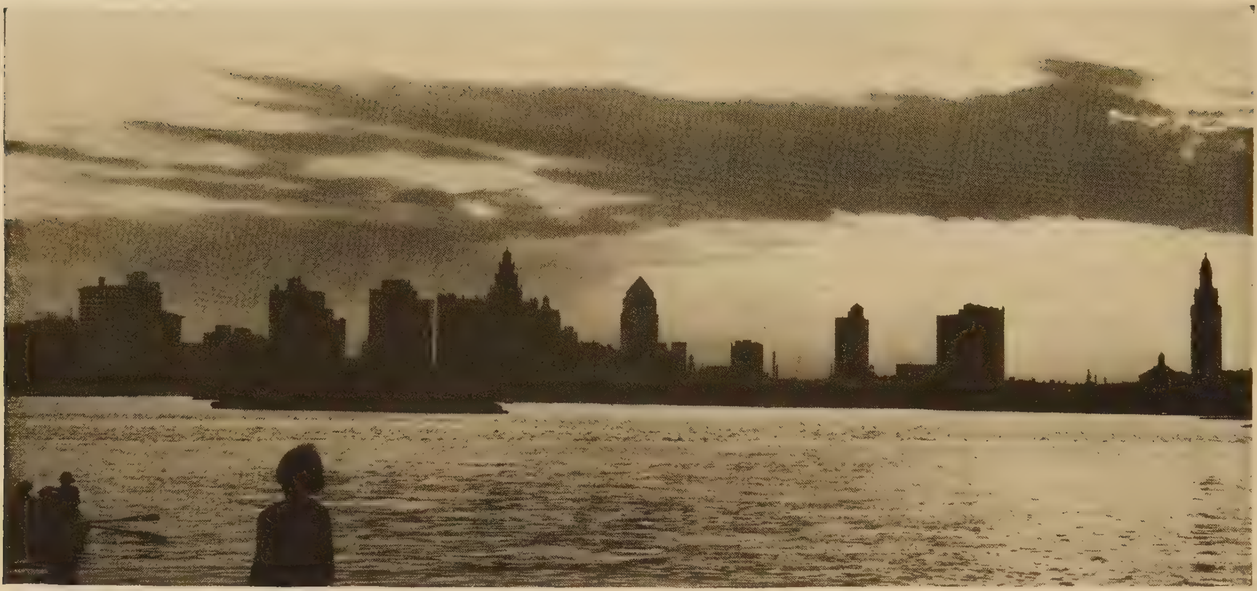
A presentation of modernistic architecture in three countries. El Lissitsky, writing the volume on Russia, is among the leaders of the young artists in that country. Richard J. Neutra, architect, of Los Angeles, writes the volume on America, and Roger Ginzburger, architect, of Paris, presents work in France, with a few words and illustrations upon French Switzerland and Italy.

ACOUSTICS OF BUILDINGS. Including Acoustics of Auditoriums and Sound-Proofing of Rooms. Second edition. By F. R. Watson. 155 pages, 6 by 9 inches. Illustrations from diagrams and photographs. New York: 1930: John Wiley & Sons, Inc. $3.

Doctor Watson, who is professor of experimental physics, University of Illinois, has long been recognized as one of the foremost authorities upon acoustics. His book, when first published in 1923, was the first systematic and comprehensive attempt in English to present the subject. The present edition incorporates new facts and a more nearly complete understanding of this science.

HIGH-LIGHTS OF ARCHITECTURE. By Edith Long Thurston. 64 pages, 8½ by 11 inches. Illustrations from pen drawings. Pelham, N. Y.: 1930: Bridgman. $2.50.

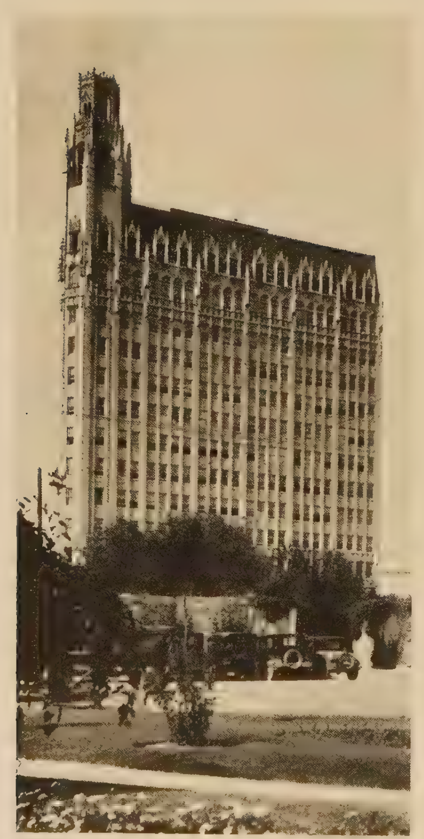
An effort to resolve the subject of architecture into its simplest terms for the younger student. The simplification is necessarily somewhat arbitrary, but it succeeds in giving the young reader a fairly well balanced, if somewhat superficial, knowledge of the mother of all arts.



© Richard S. Grant, New York City

The skyline of Miami, Fla.

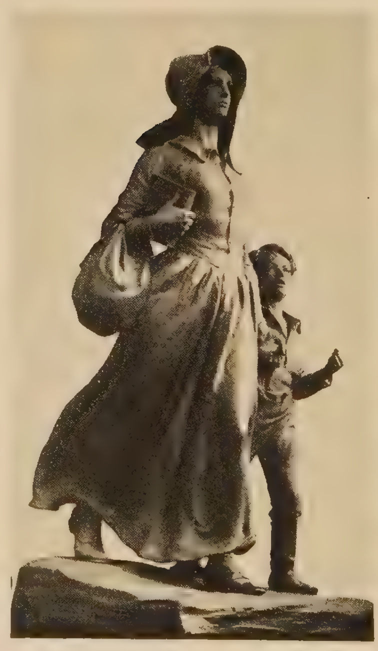
Architectural News in Photographs

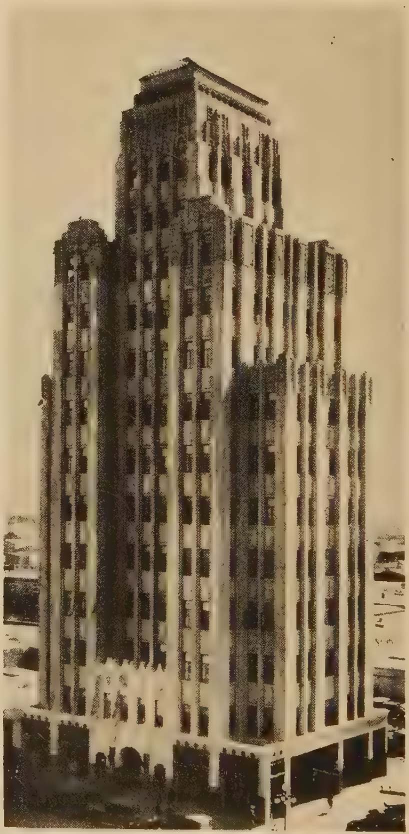


By Ewing Galloway, New York

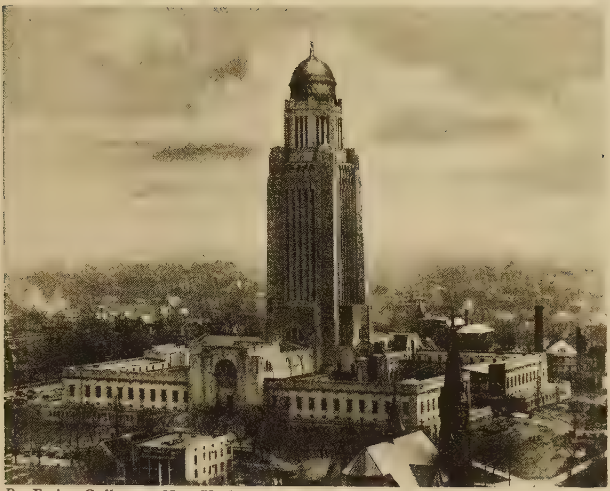
A modern office-building looks down to-day on the famous Alamo, San Antonio, Tex.

The monument to "The Pioneer Woman," recently unveiled on the Cherokee Strip, Okla. Bryant Baker, sculptor



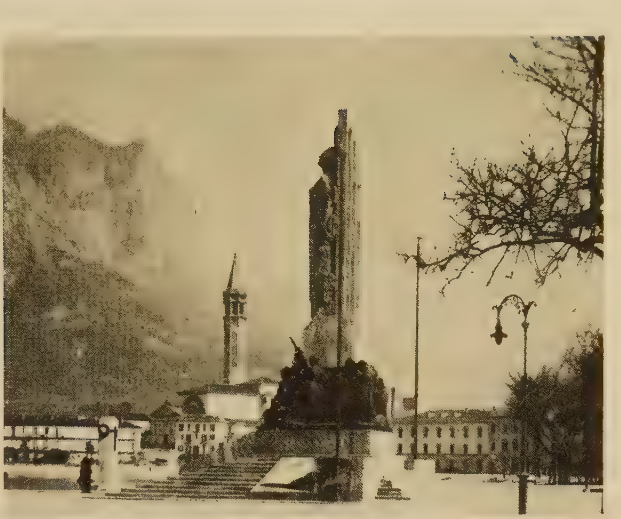


The Luhrs Tower, a new addition to Phœnix, Ariz. Trost & Trost, architects and engineers

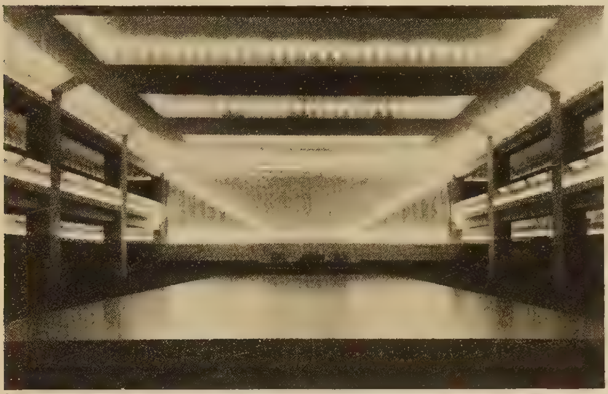


By Ewing Galloway, New York

The tower of Bertram Goodhue's Nebraska State Capitol is nearing completion

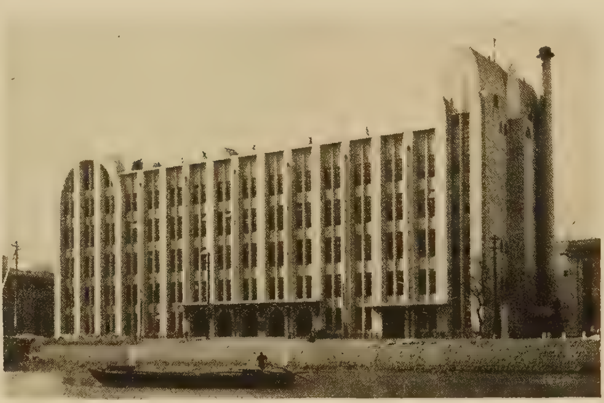


A war memorial to Italian Alpinists, recently unveiled in Lecco, Italy



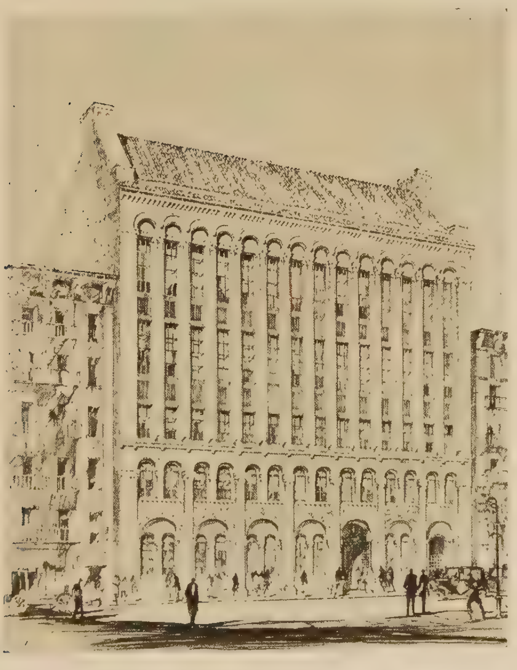
© Emelie Danielson

Indirect color lighting is extensively used in the Hotel St. George, Brooklyn. Emery Roth, architect

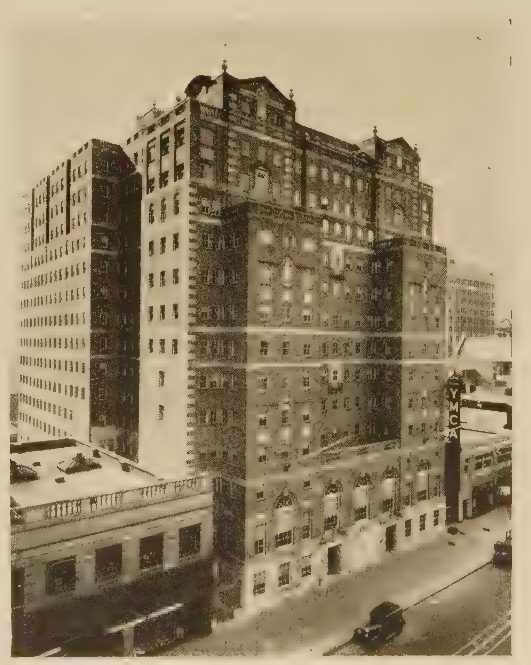


By Ewing Galloway, New York

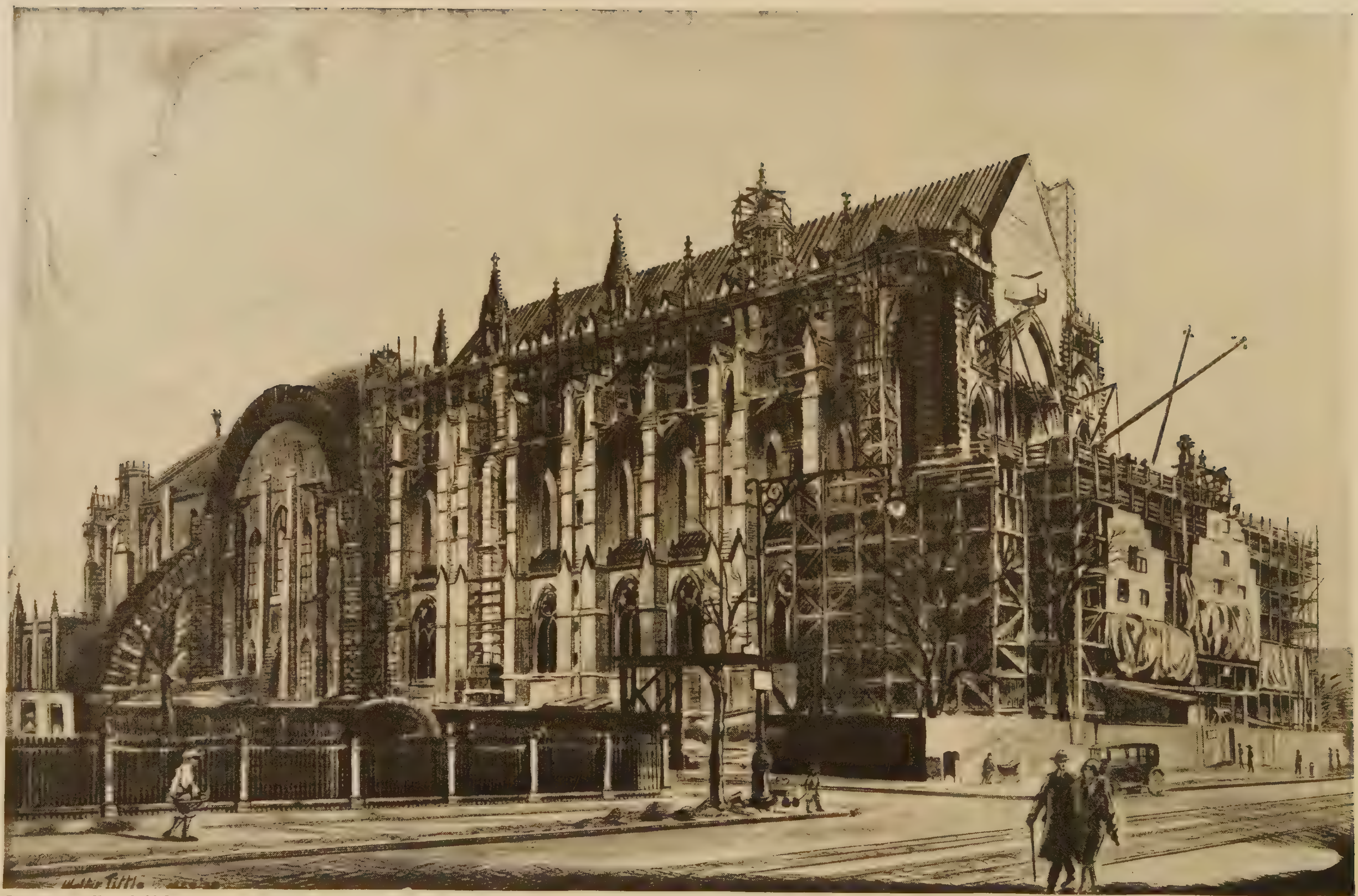
The Central Telegraph Office at Tokyo—Japan's latest essay in the modern manner



The Murry and Leonie Guggenheim Dental Clinic, New York City. York & Sawyer, architects



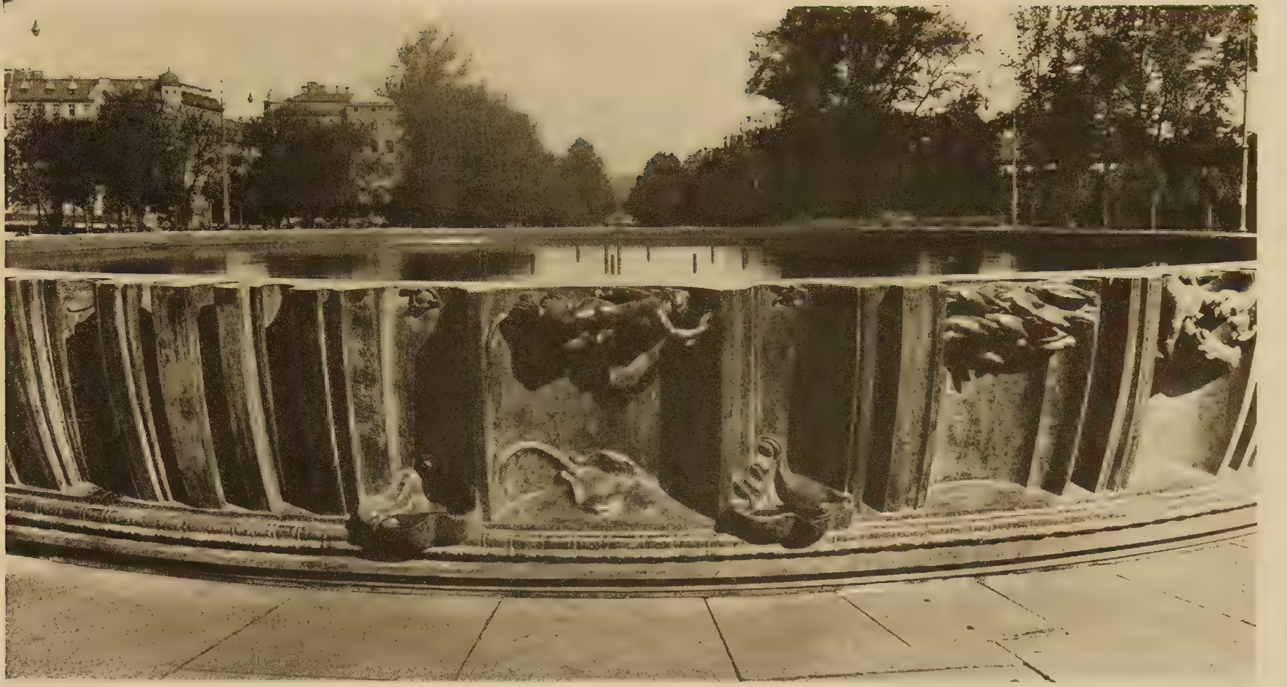
William Sloane Memorial Y. M. C. A., New York City. Cross & Cross, architects



By courtesy of Kennedy & Company

CATHEDRAL OF ST. JOHN THE DIVINE, NEW YORK CITY, THE NAVE AND WEST FRONT

From the etching by Walter Tittle



Poseidon Fountain, Göteborg. A circular basin of bronze, 12 meters in diameter

The Work of Carl Milles, Sculptor

By William Gehron

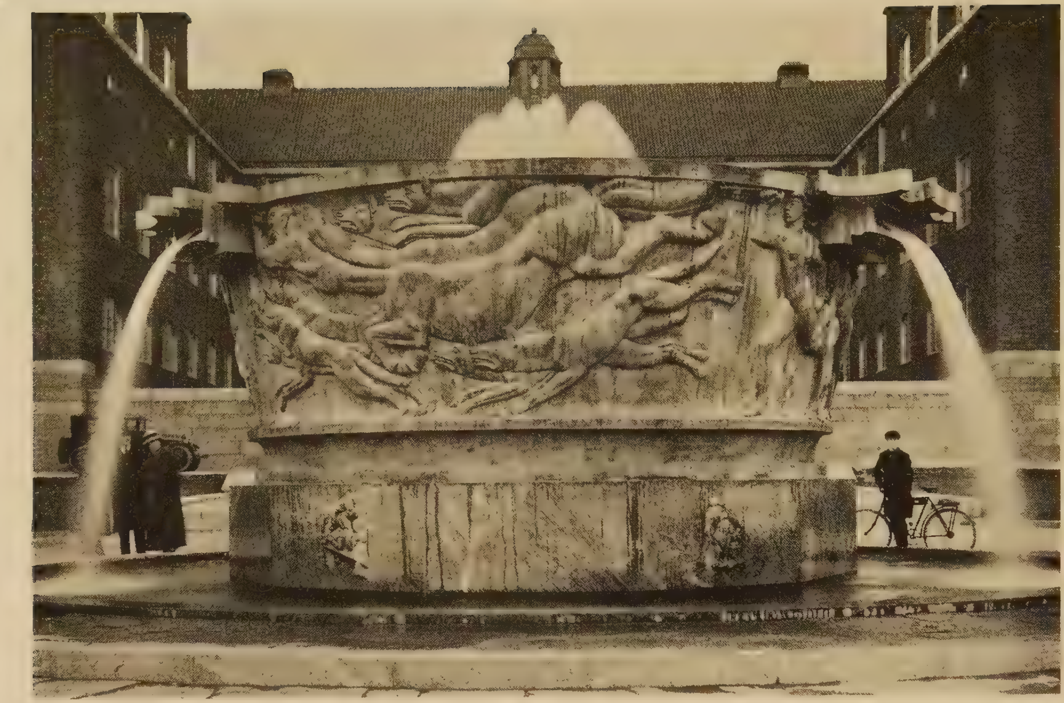
TO any one who, for the past fifteen years or so, has followed the development of art in Sweden, it is not surprising that this comparatively small country has produced a sculptor like Carl Milles. Nevertheless, though Milles was born in Sweden, he is a citizen of the world. His mind and his heart are concerned with art wherever it may be found; it is fenced off by no boundaries, either private or national.

Carl Milles lived in Paris during the years 1887 to 1905, and spent most of this time working in the studio of Rodin. Later he worked for a while in Munich, and in 1906 returned to Stockholm, where he has since become one of the leading forces in the art of his country.

Last year, for the first time he visited America, and, through the efforts of Mr. George Booth, the well-known Detroit patron of the arts, was persuaded to spend three or four months of each year in this country. Most of this time will be spent at Cranbrook School, which Mr. Booth and Eliel Saarinen are building near Detroit.

Carl Milles is not a stylist in his sculpture. His work shows that he has absorbed the very essence of great sculpture left to us from past ages, but his own work is created afresh from his inner storehouse of knowledge, stimulated by imagination. The fountain, for example, has been such a sculptural favorite in the past that we of to-day have difficulty in breaking away from the established forms. Not so with Carl Milles. The illustrations herewith will indicate very clearly how fresh has been his imagination in designing fountains that are new contributions to the art of the ages. In my mind there is no doubt that these are the best fountains that have been created since the time of the great Renaissance masters in Italy.

The fountain at Göteborg is a bronze basin about thirty feet across, characterized by vertical ribs or great mouldings—a curiously skilful blend of Gothic and classic. The vertical mouldings are quite Gothic in character, while the moulding at the base and the bold circular sweep of plan are distinctly classic. This happy combination of style motifs is freely found in Milles's work. In the hollows of the vertical mouldings the Triton, Naiads, fishes, etc., illustrate a mythological story, and, in conjunction with the



Fountain memorializing industry, in the courtyard of the Technical Institute, Stockholm

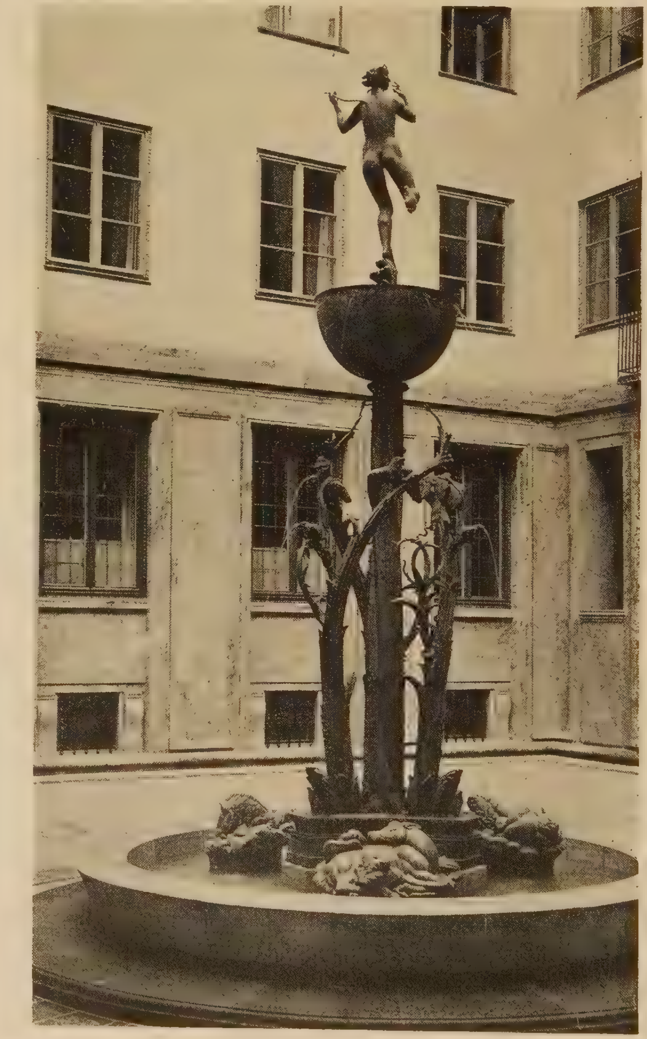
Diana Fountain in the courtyard of the Swedish Match Company's office - building, Stockholm — in green bronze with a base of Swedish marble. Height, 5 meters

wavy line produced by the abrupt section through the mouldings, expresses the life and movement of the sea. All of the details are beautifully executed, and are true to the flowing technic of bronze. This fountain, like most of Milles's bronzes, is finished with a bluish-green patine that is rarely found excepting in some of the ancient Egyptian and Pompeian bronzes. Parenthetically it may be said that the fountain is not complete; the sculptor's conception calls for a rather slender figure of Neptune, some fifteen feet high, standing upon a group of small-scale motifs in the centre.

In the forecourt of the Technical Institute in Stockholm is a fountain memorializing industry. The frieze (above) is of relief sculpture picturing amazons, centaurs, and other creatures symbolizing the forces of nature tamed to the service of man. The water gushes from four great slots near the top, and the whole design gives an impression of great power and force.

Contrasted with the Technical Institute fountain is one that Carl Milles did for the court of the Swedish Match Company's office-building. Here there is delicacy, grace, and a lighter spirit of playfulness. The blending of bluish-green bronze with the watery green of the marble figures and basin is unusually lovely.

Another of Milles's great masterpieces is the "Singer to the Sun." It represents the work of some six years, during which several complete models were destroyed before the sculptor was



"*Singer to the Sun.*" *The original, with both head and arms, stands in front of the King's Palace, Stockholm*

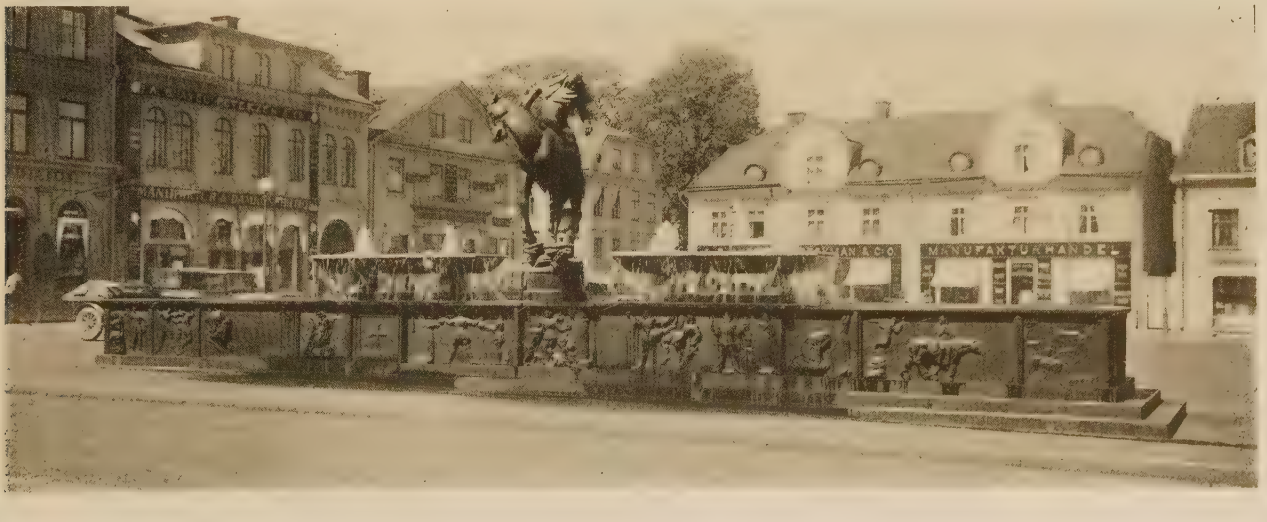
satisfied. The original has both head and arms, and stands near the water's edge in front of the King's Palace in Stockholm. Milles lopped off the head and arms in the feeling that the torso itself was the main object of interest. A number of European critics have appraised this as the finest torso done since the Greek period.

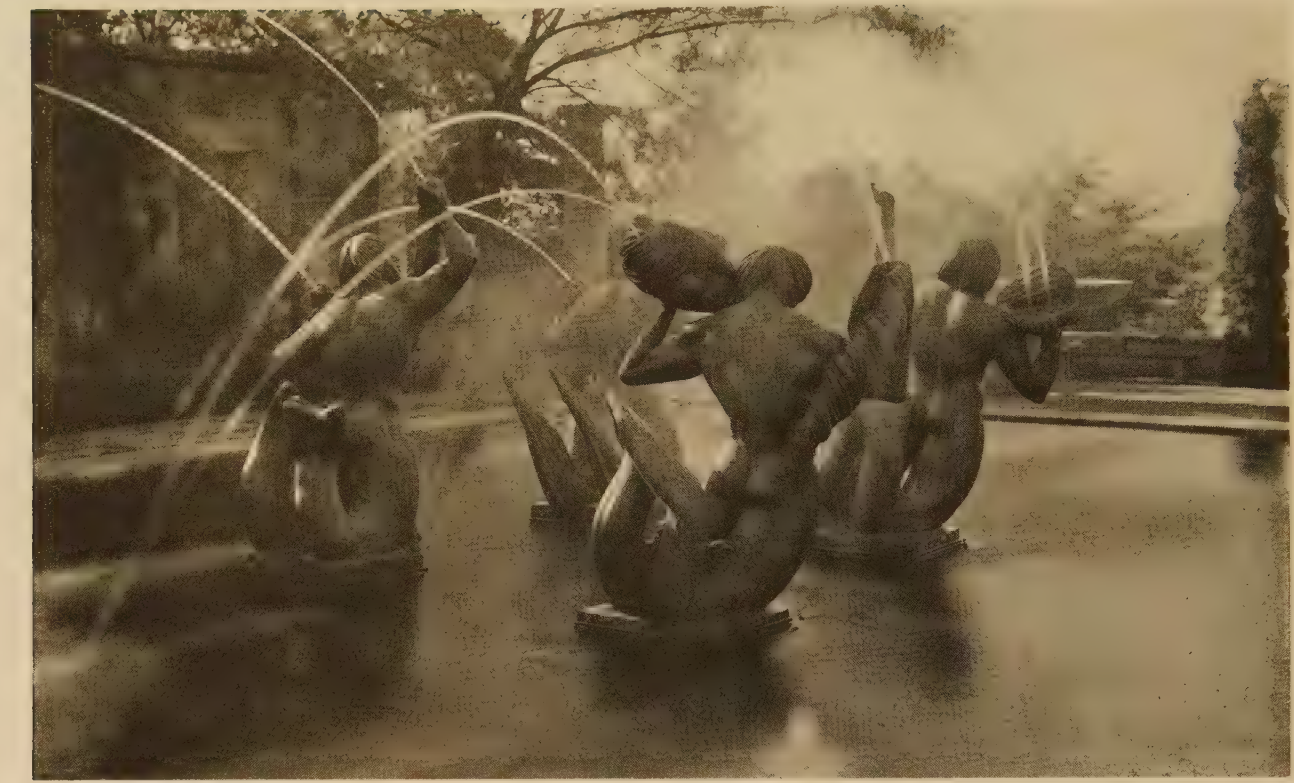
"The Archer" is Milles's expression of the indomitable will of man in the face of powerful nature. Milles shows a man defying the elements, and going beyond into space, fearing nothing as he defiantly shoots his arrow into the sun. The figure stands upon a polished granite shaft, about forty-five feet high, at the entrance to the Exhibition Hall, Stockholm. Close study reveals the fact that the figure itself is neither natural nor human in its proportions and details —rather a design of man by man to tell a story.

"The Tritons" shown on page 348 is part of a fountain and swimming-pool in Professor Milles's own garden. The movement and energy expressed here in the figures themselves, combined with the curving jets of water, are original and worthy of a great deal of study. One sees something new and refreshing in composition and movement from each successive point of view.

In his Linköping Fountain, Milles has recreated in bronze a character that will live for future generations. The horseman is Folke Filbyter, who lived in Linköping in the twelfth century. His beloved grandson was stolen by the monks, and Folke spent the remainder of his life on horseback in search of him. Milles shows him as an old man, broken in body, spirit, and hope, but still on the quest. The horse, too, is old, but seems to sense the mission, looking to the right while the old man peers dimly off to the

Folkunga Fountain, Linköping. The reliefs on the black granite basin tell of events of the thirteenth century in Swedish history. The horseman is Folke Filbyter

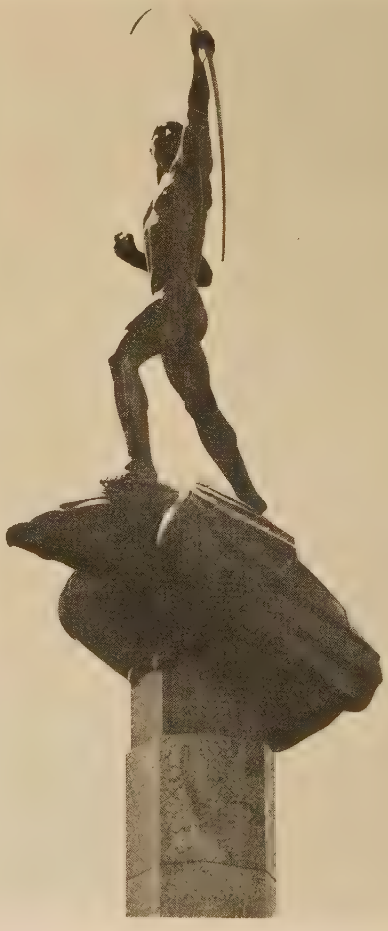




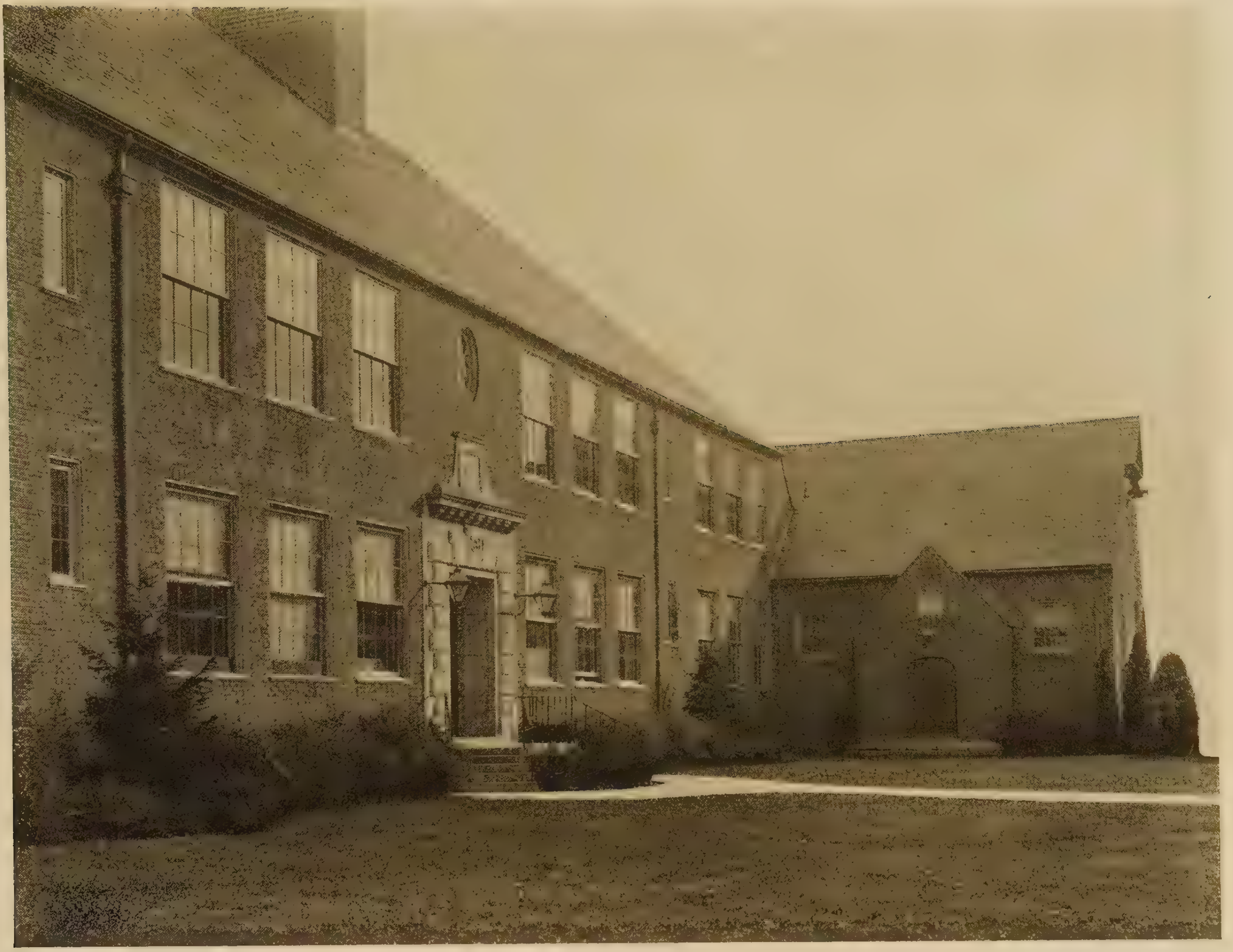
"The Tritons," part of a fountain and swimming-pool in Carl Milles's own garden, Stockholm

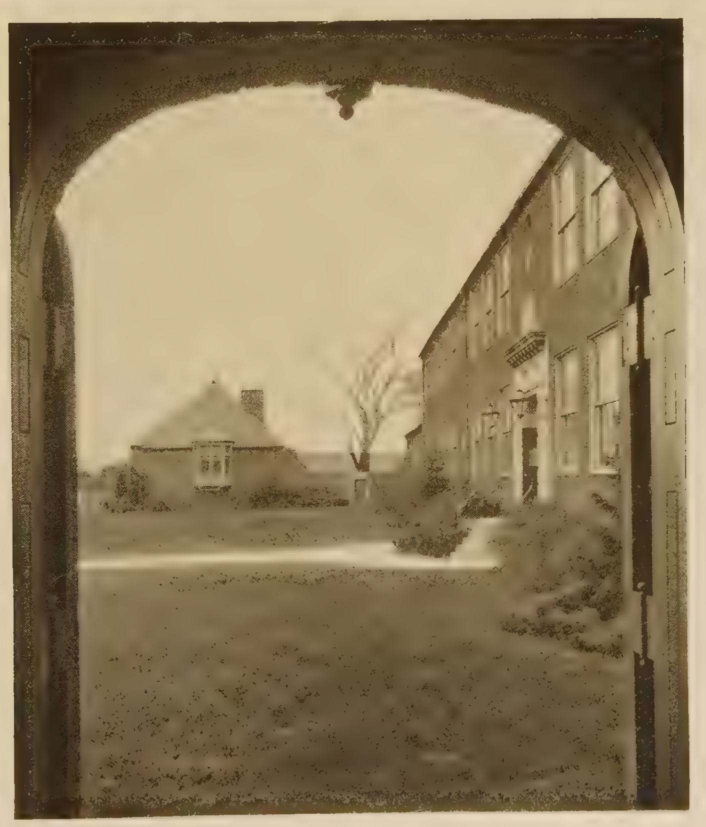
left. Folke no longer guides the horse, as he has exhausted all trails, and has looked so long that his eyes are bulging almost to blindness. The intensity of feeling produced by this work cannot be expressed in words. The contrary movements of horse and swaying broken man, the closely planted hoofs giving a feeling of very slow, plodding movement, combine to give a subtle rhythm to the design from every point of view.

Carl Milles is an artist. Folke Filbyter shows that he has feeling and sympathy, that he can touch the heart. "The Singer to the Sun" testifies to his thorough knowledge of anatomy and form. The office-building fountain bears witness to his understanding of nature. "The Archer" proclaims a spirit and an aspiration which stop at nothing. We have every reason for great expectations of the work Carl Milles will do for America.



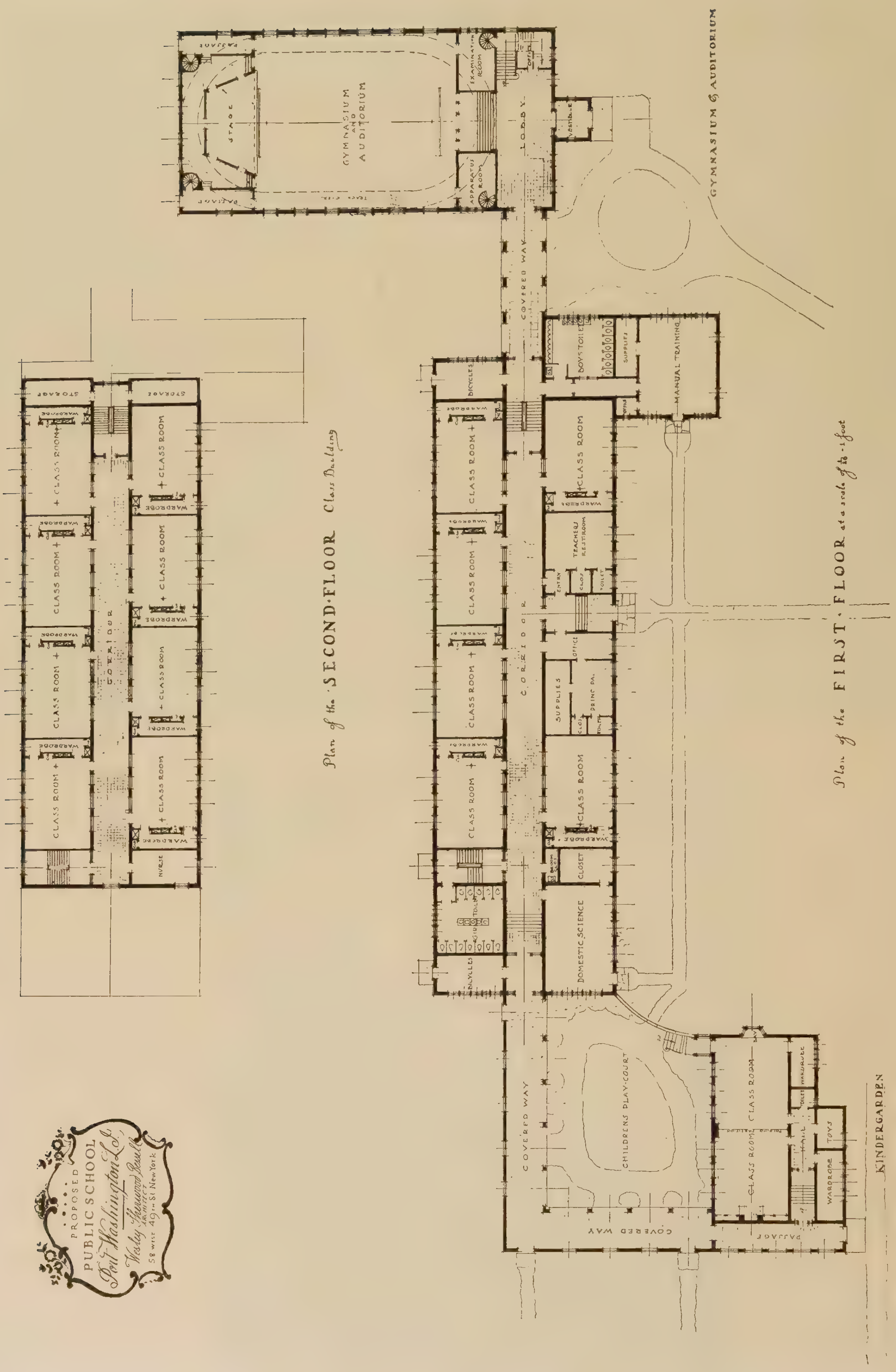
"The Archer." Milles's expression of the indomitable will of man in the face of powerful nature. The figure stands upon a shaft forty-five feet high before the Exhibition Hall, Stockholm





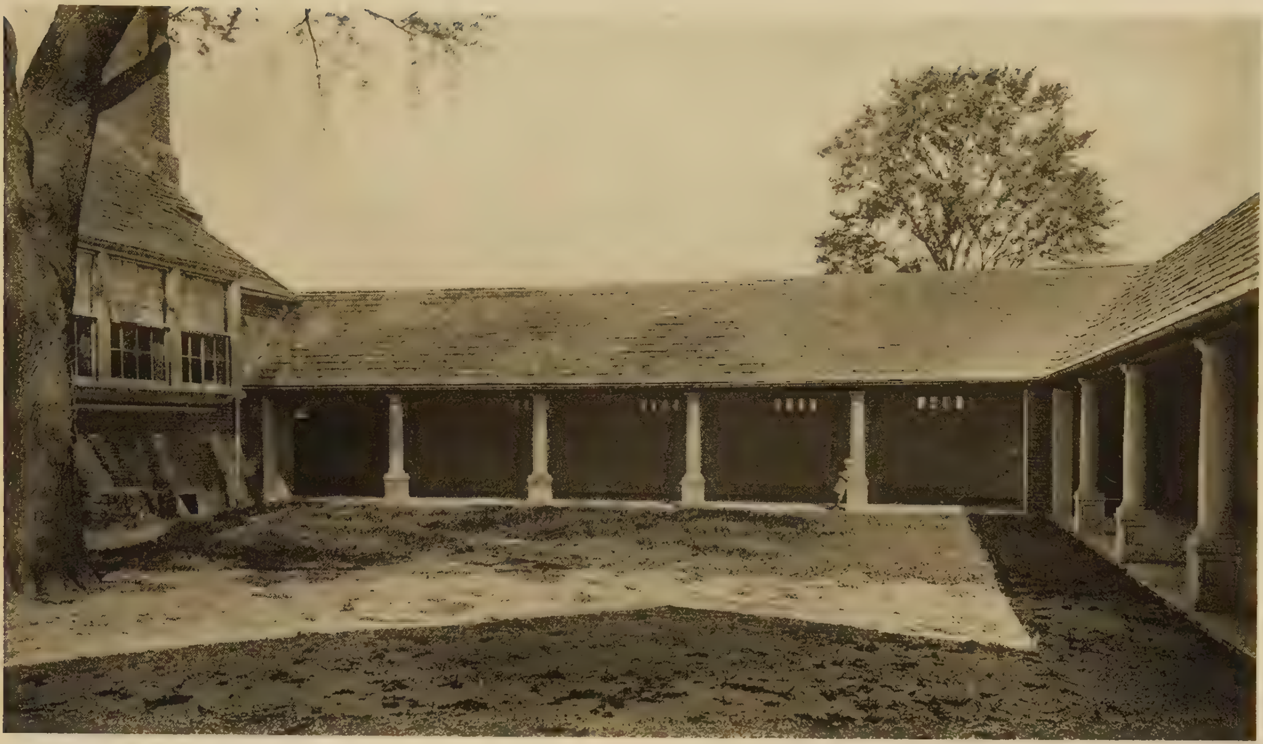
Flower Hill
School
(Public School
No. 5),
Port Washington,
Long Island

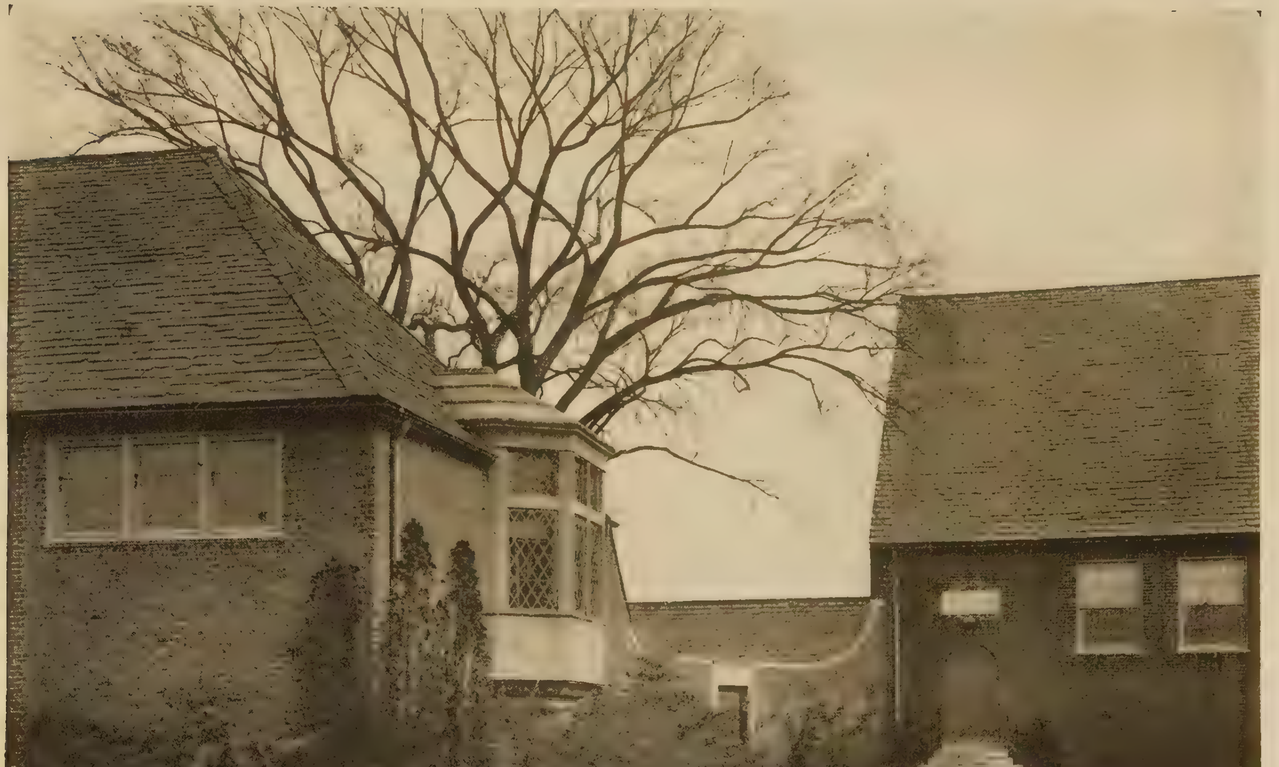
WESLEY S. BESSELL,
ARCHITECT



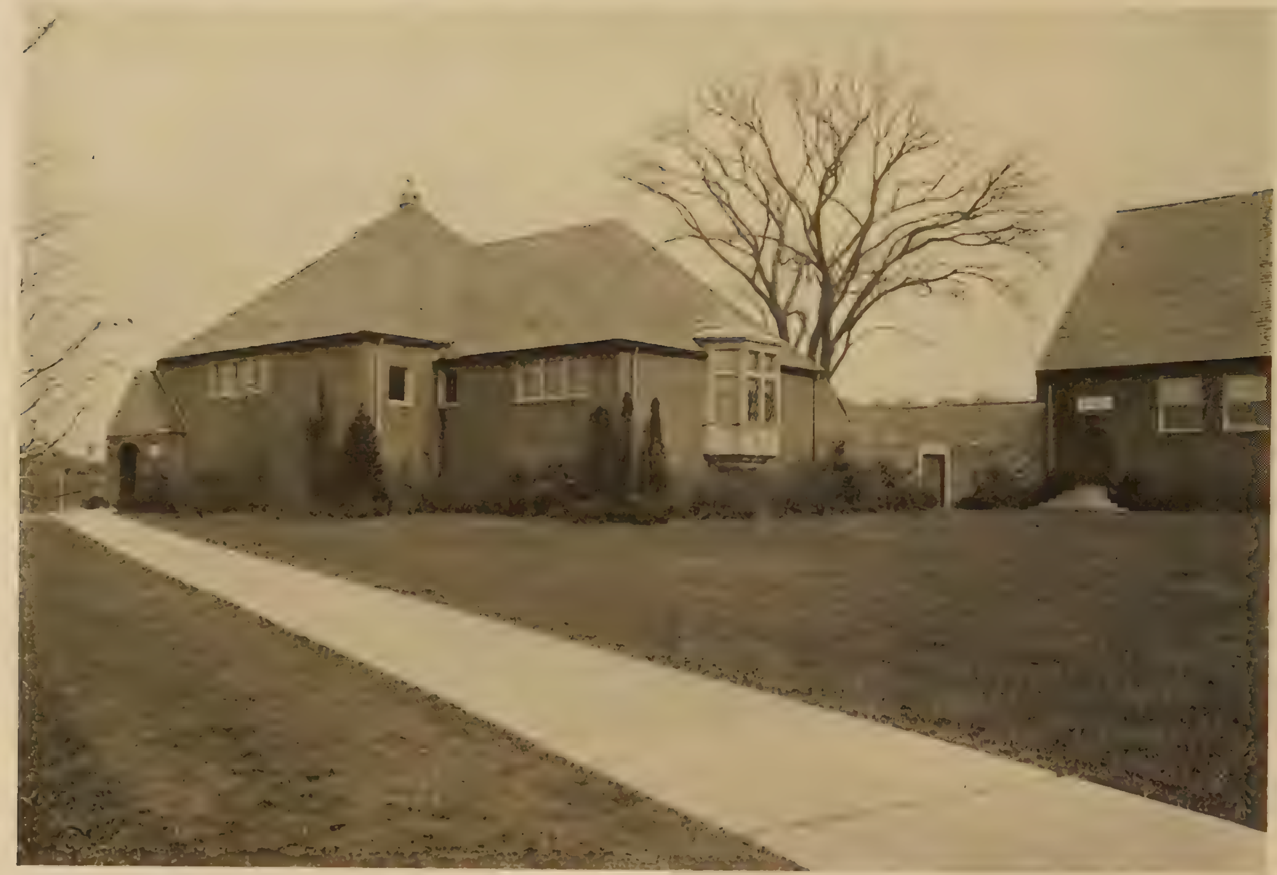
FLOWER HILL SCHOOL (PUBLIC SCHOOL NO. 5), PORT WASHINGTON, LONG ISLAND

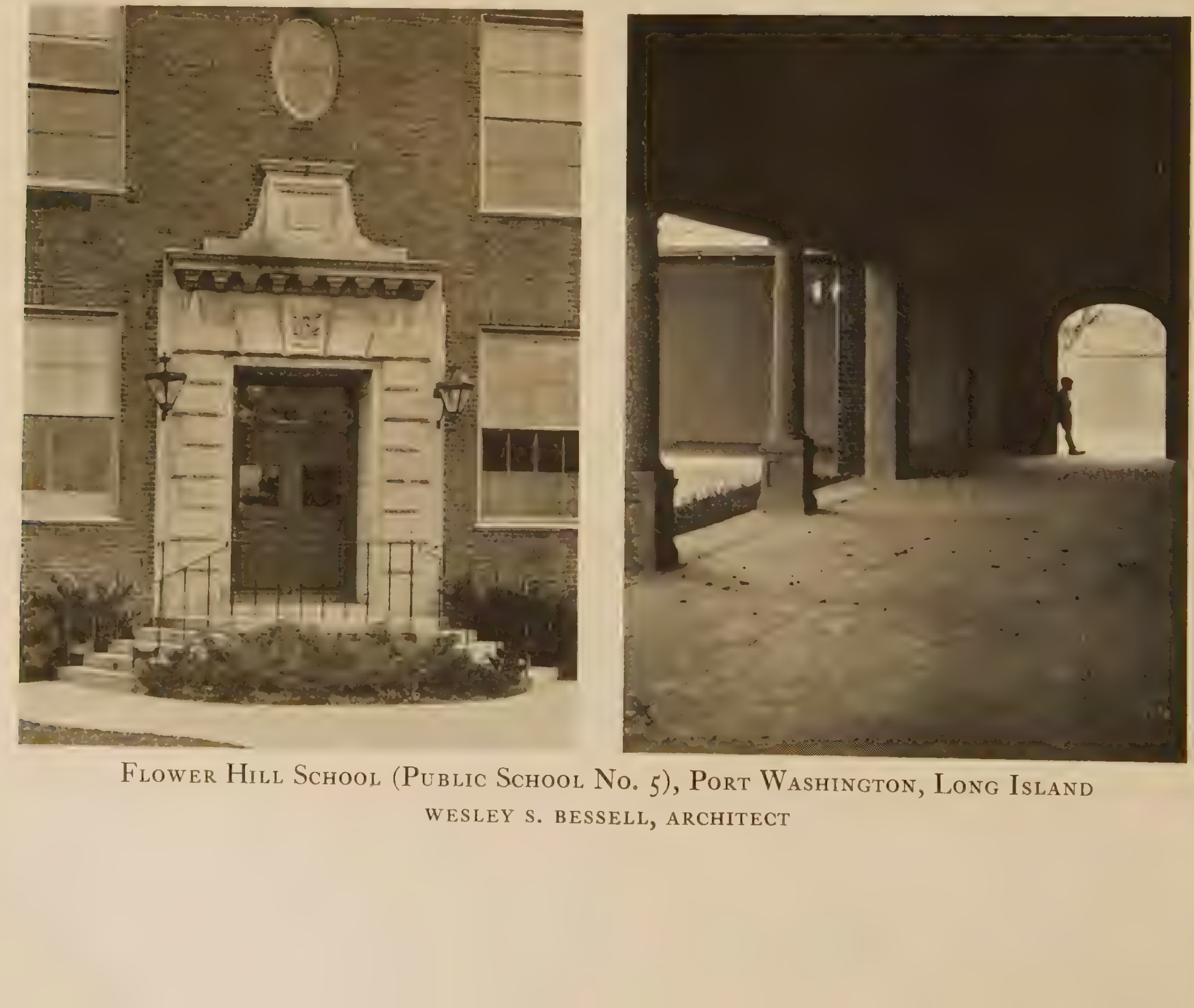
WESLEY S. BESSELL, ARCHITECT



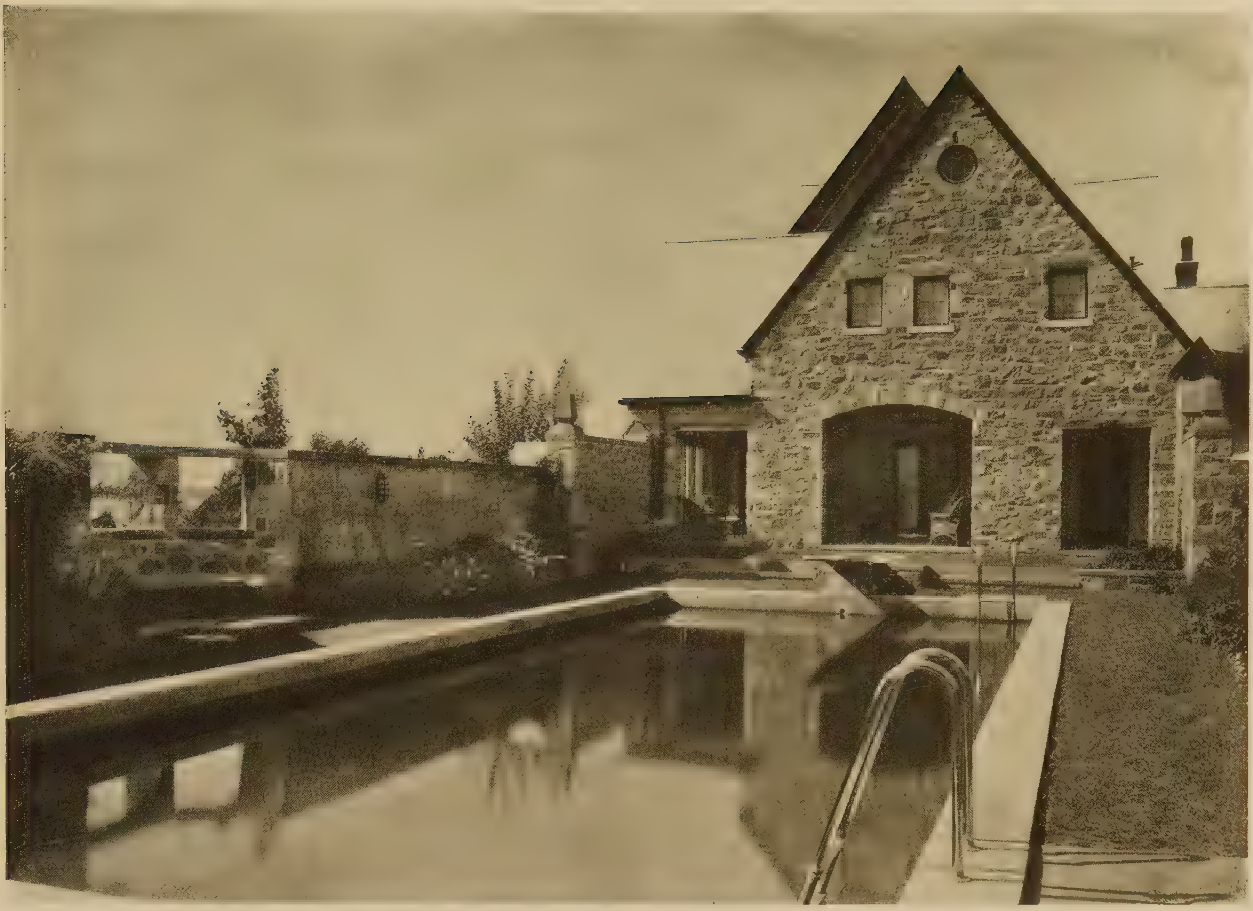


Flower Hill School, Port Washington, Long Island   wesley s. bessell, architect

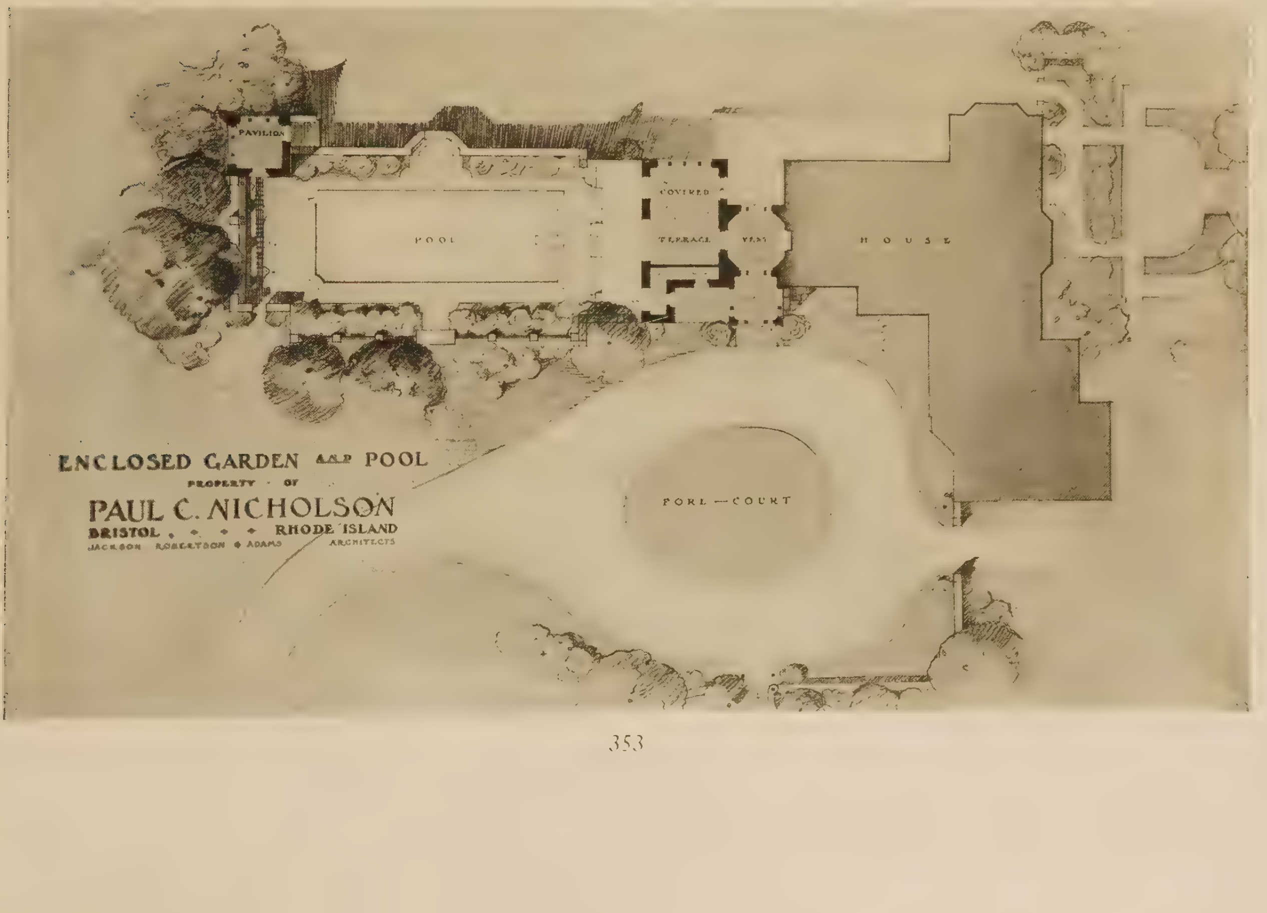


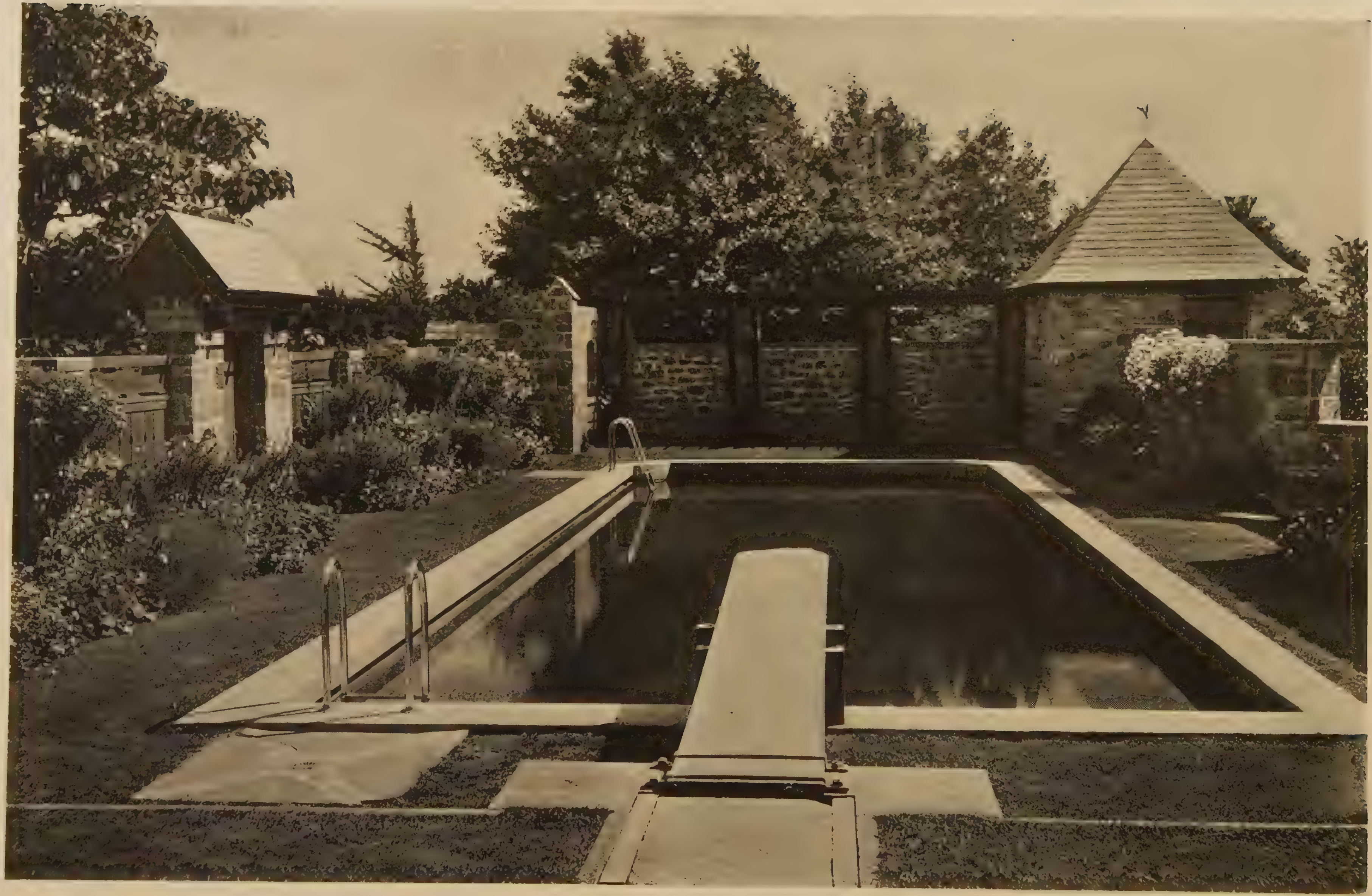


Flower Hill School (Public School No. 5), Port Washington, Long Island
WESLEY S. BESSELL, ARCHITECT

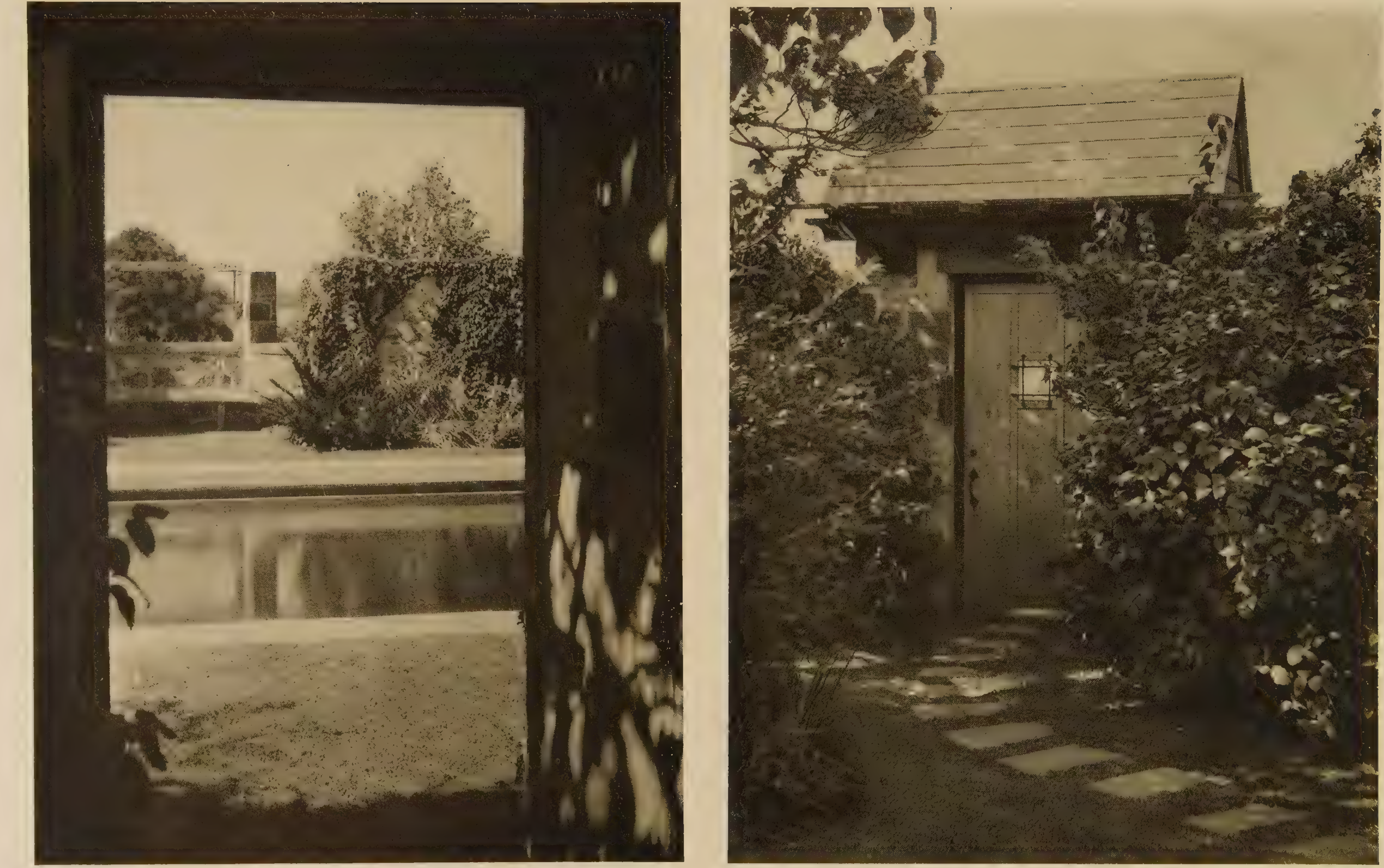


Swimming-Pool on the Estate of Paul C. Nicholson, Bristol, R. I.
JACKSON, ROBERTSON & ADAMS, ARCHITECTS
(The house itself was designed some years ago by Trowbridge & Livingston, Architects)
Photographs by Paine Studios

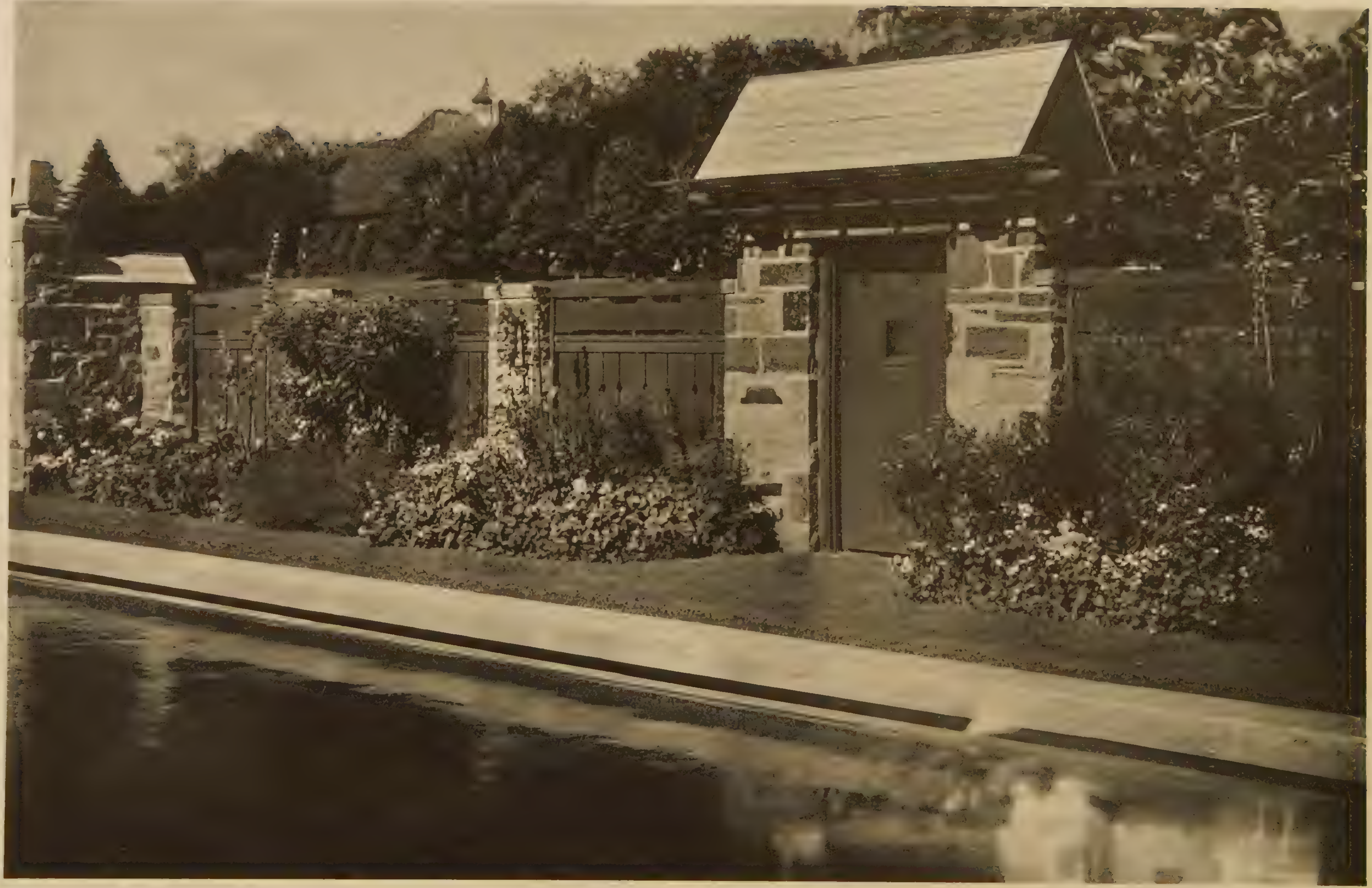




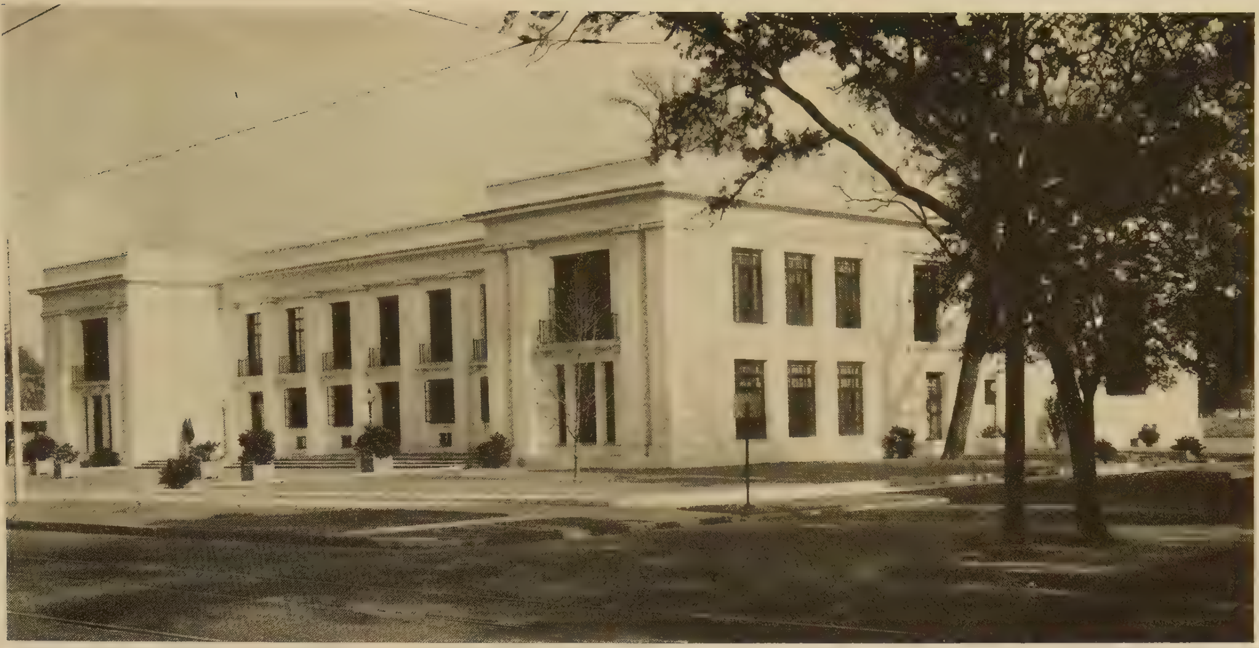
Swimming-Pool on the Estate of Paul C. Nicholson, Bristol, R. I.
Jackson, Robertson & Adams, Architects



SWIMMING-POOL ON THE ESTATE OF PAUL C. NICHOLSON, BRISTOL, R. I.
JACKSON, ROBERTSON & ADAMS, ARCHITECTS

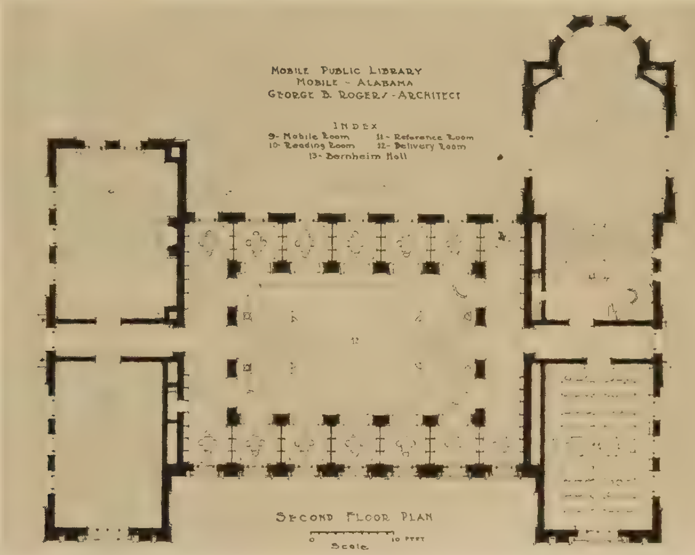


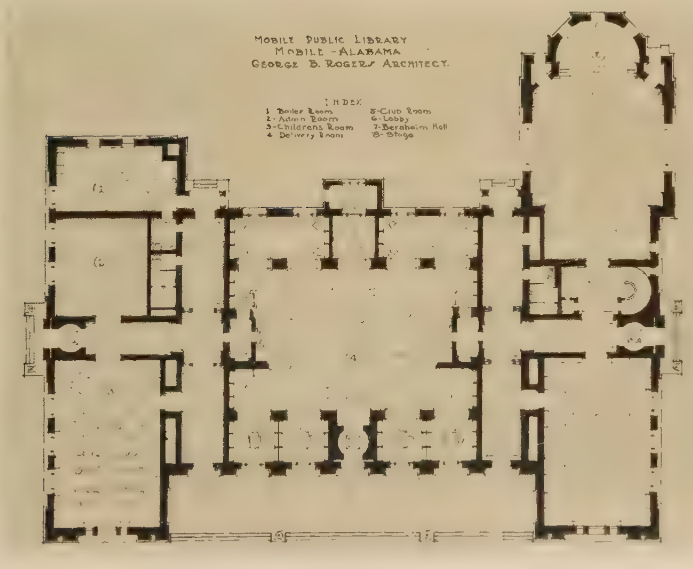
Swimming-Pool on the Estate of Paul C. Nicholson, Bristol, R. I.
Jackson, Robertson & Adams, Architects



The library building, site, and equipment was financed by a bond issue of $250,000, to which was added private gifts of $31,000. The building contains twenty-five thousand volumes

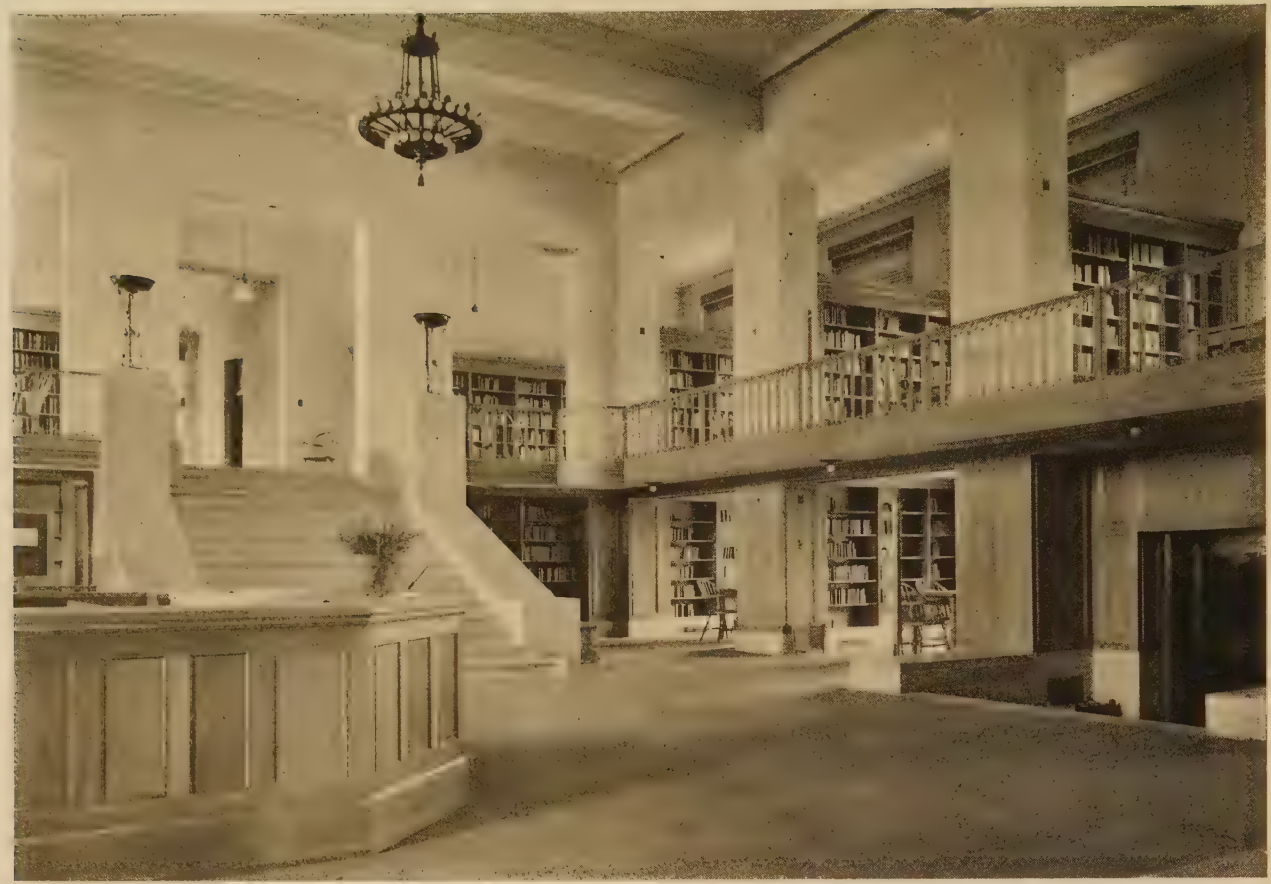
Photographs by Tebbs & Knell, Inc.





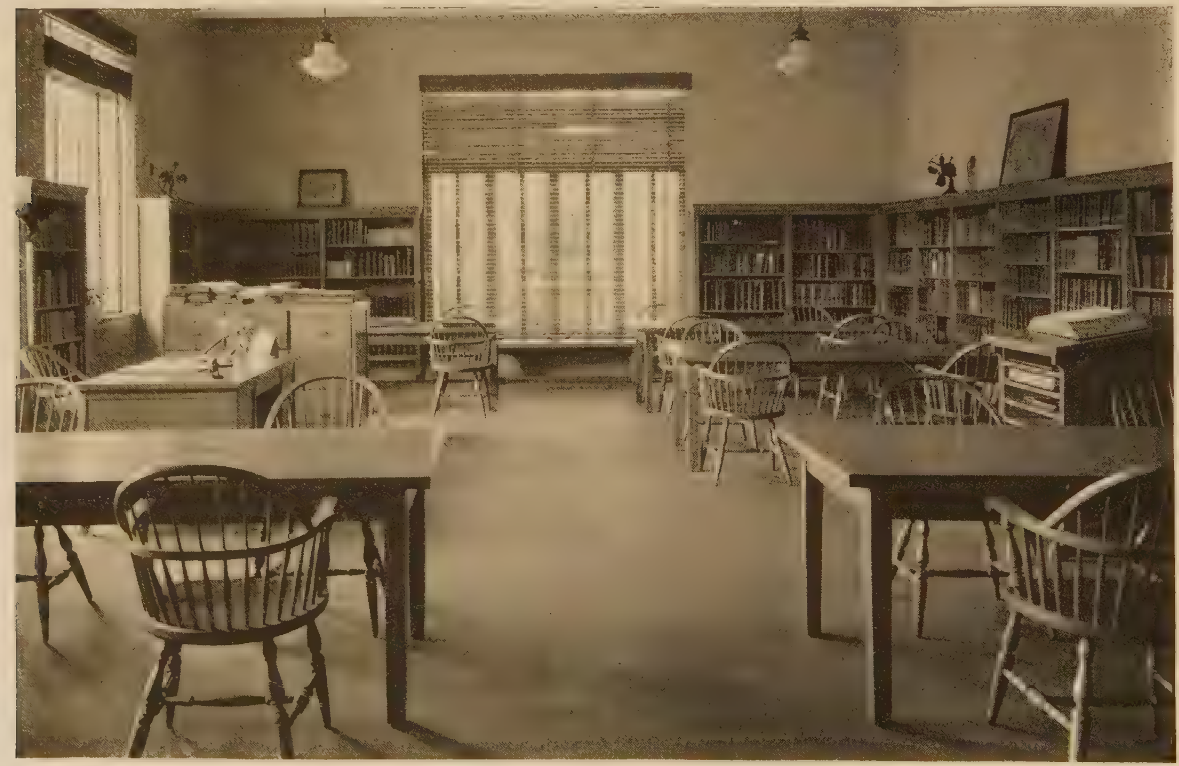
MOBILE PUBLIC
LIBRARY,
MOBILE, ALA.

GEORGE B. ROGERS,
ARCHITECT

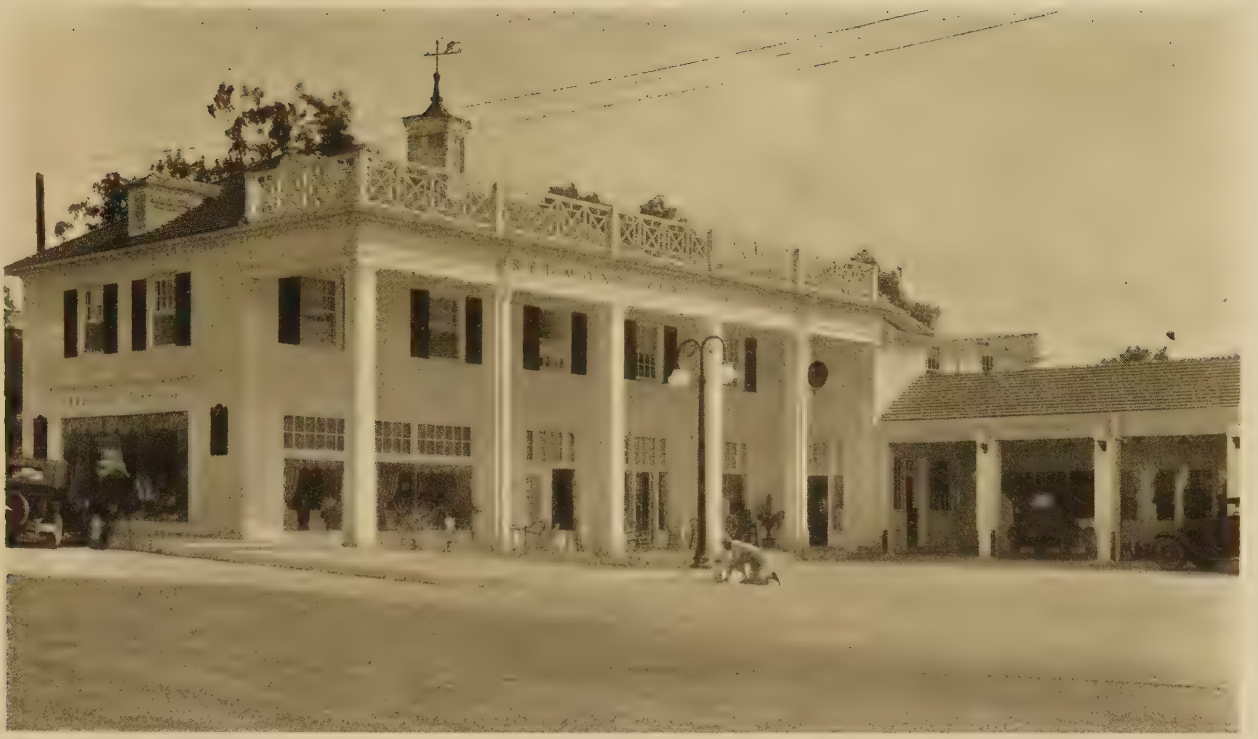


Main hall with entrance at right

The workroom in one front wing of the first floor



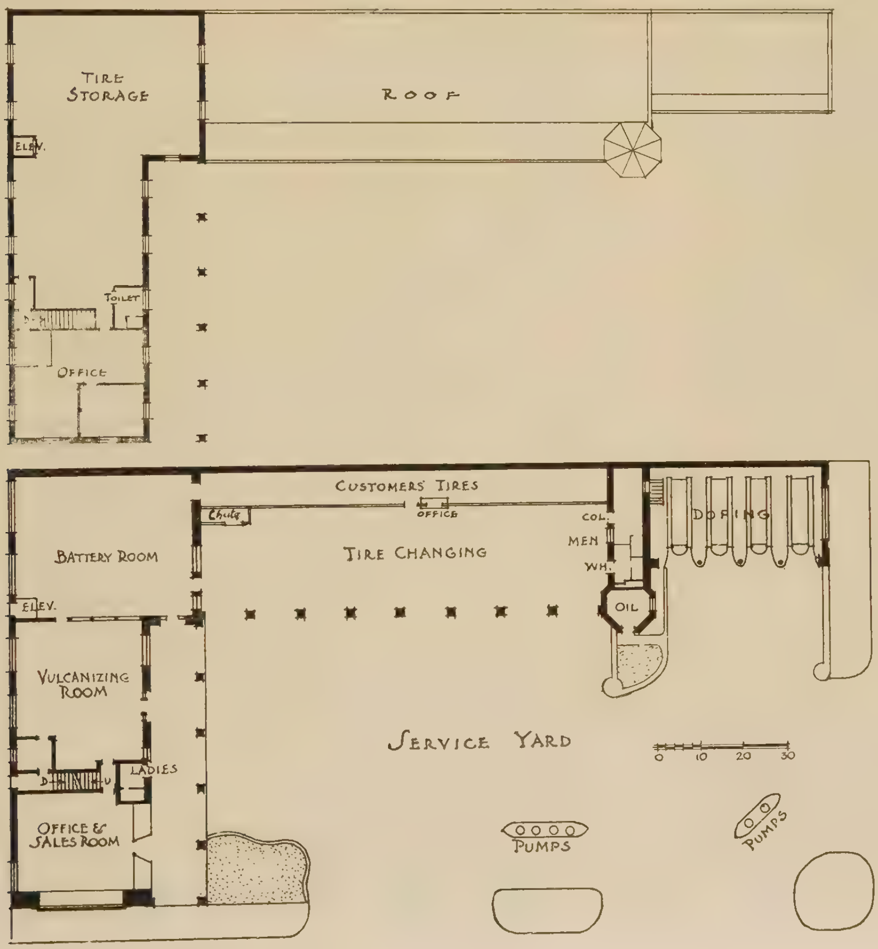
MOBILE PUBLIC LIBRARY, MOBILE, ALA. GEORGE B. ROGERS, ARCHITECT

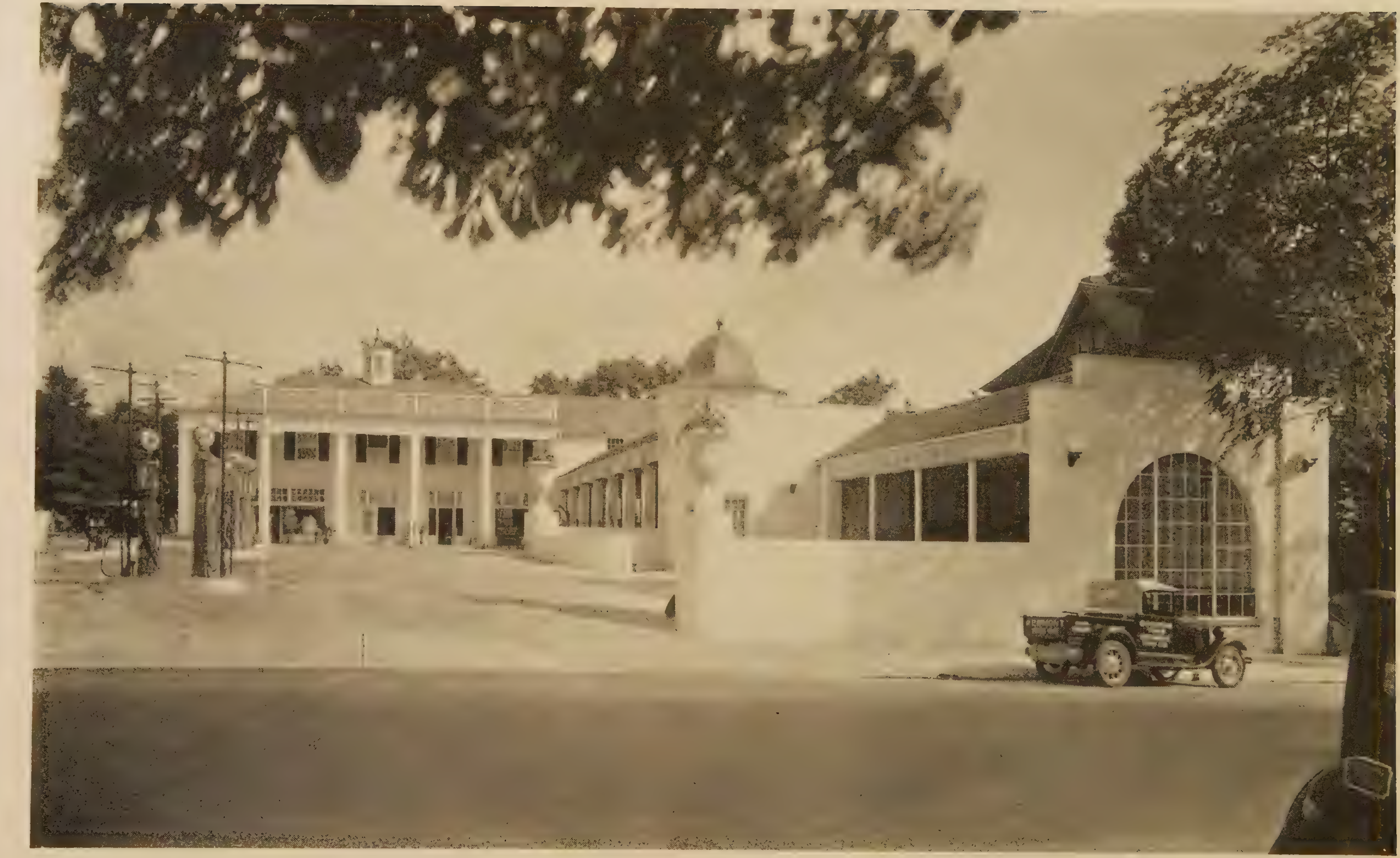


Photographs by Tebbs & Knell, Inc.

REDMONT TIRE COMPANY BUILDING, BIRMINGHAM, ALA.

CHARLES H. McCAULEY AND ROWLAND M. JOHNSON, ASSOCIATED ARCHITECTS





The company is using a free adaptation of the Mount Vernon type of building here and in the small branch stations scattered throughout the State

Redmont Tire Company Building, Birmingham, Ala.
CHARLES H. McCAULEY AND ROWLAND M. JOHNSON,
ASSOCIATED ARCHITECTS

The Editor's Diary

Tuesday, March 25.—Spent a leisurely luncheon hour with Harry Leslie Walker, talking of the curious traditions that have clustered around English country parish churches—the location of the font near the north door so as to permit an easier exit of the devil; the making of maiden's wreaths of paper flowers which, with possibly a glove in the centre, were hung in the church as memorials. In one or two instances some of these still hang on little wrought-iron brackets along the bottom chords of the roof trusses.

Wednesday, March 26.—Ran into Ralph Adams Cram at the Century, finding him in the swift pace he maintains in his travels about the country, inspecting work, consulting with building committees, and lecturing. To-night he is speaking in St. Bartholomew's Church House, and suggested that if I came, though uninvited officially, he would try to prevent my being put out.

His talk was on his cruise in a private yacht through the Mediterranean, stopping at unfrequented ports, investigating Greek, Roman, and Gothic monuments that have been too generally overlooked, and photographing as he went. I marvelled at Mr. Cram's patience in not shooting the two lantern operators who were ostensibly displaying his slides but in reality were ruining the effect of half of them through their inept handling of the projection apparatus. Incidentally he confessed to having been born in 1863, but in the face of his tremendous vigor, enthusiasm, and keenness of mind, I'm sure no one believed him, least of all, myself. I've known him for over twenty-five years, and will swear that he hasn't grown a day older in that time, so I think the sixty-seven years he claims have elapsed only in his fertile imagination.

Thursday, March 27.—Another one of the series of weekly lectures at N. Y. University late this afternoon. Mr. Cram talking on "Church Building," and I overheard some students trying to bribe their way in, offering to stand on one foot if need be, but the capacity of the room was rigidly maintained. This cannot be a synopsis of Mr. Cram's inspiring talk, but here are a few statements that I might set down:

Religion was the motivating or chief controlling factor in all architecture up to the sixteenth and seventeenth centuries.

Architecture is so closely bound up with other arts—sculpture, painting, etc.—that there are but two structures in the world that are solely architectural: the pyramids, and the Washington Monument.

In America, one can set down an exact date, and say that, with a few sporadic exceptions, the architecture before that date was uniformly good; after that date for fifty years it was uniformly bad, reaching the lowest point in the art history of civilization. That date was the year 1828. Then something happened—two men, in fact: H. H. Richardson, and Charles F. McKim, a draftsman in the former's office. One brought a rugged masculinity into American building; the other an almost feminine delicacy of perception and taste. From that moment our architecture began its progress upward. At the present time we are doing the best work that is being done in the world.

Friday, March 28.—In Bahia, a city of northern Brazil, the people have long been in the habit of climbing a steep hillside from the docks and commerce of the bay to their residences on the crest. A municipal elevator tower is now ending that drudgery, two cars of 27 passengers capacity, and a speed of 700 feet per minute, making it possible to raise 4,000 persons an hour over the 195 feet between the city's two levels.

Sunday, March 30.—Had my first sight inside the Church of the Heavenly Rest on Fifth Avenue at 90th Street. Mayers, Murray & Phillip designed it, and the photographs attracted considerable attention at the recent League Exhibition. To my mind the interior is a real achievement in austere dignity and simplicity. Some one recently remarked that the church perfectly lighted artificially was still to be built; well, here is one that takes a long step toward that end. There is not a lighting-fixture visible as one stands in the nave. The side aisles are lighted from small panels sunk in the piers. The side walls are lighted from banks of lights above and behind the aisle vaulting, so arranged that the cross rays do not come down farther than the top of the aisle arches. No source is visible but the effect is that of a nave lighted only from the main windows above the side aisles, with a sort of late afternoon light. The deep choir is lighted from behind its front arch, its simple altar block of white marble glowing against the red velvet dossal that hangs upon the limestone reredos.

Monday, March 31.—President Hoover to-day signed the Elliott-Keyes Public Buildings Bill, authorizing an additional $230,000,000 for the Government's programme of public works. This paves the way for the Treasury to begin operations this year on construction totalling $90,000,000. The total amount now authorized for public buildings is $553,000,000, to be expended at the rate of $50,000,000 a year—$35,000,000 outside the District of Columbia and $15,000,000 in the District, until the programme is worked out. Since the bill provides authorization for the Treasury Department to select outside architects, it is presumed that a large part of this building will be so distributed, the smaller post-offices and similar work being designed in the office of the Supervising Architect.

Tuesday, April 1.—Called on William Mitchell Kendall, senior member of the firm of McKim, Mead & White, to talk over a list of books for the architect's library. Incidentally, Mr. Kendall expressed himself upon the subject of architectural criticism. If we are going to have it, Mr. Kendall feels that we should have some way of developing critics. There is no reason why a man should feel qualified to express an opinion upon architectural design without having a rather well-founded knowledge of architecture and the architect's point of view. Since it is unlikely that any of the universities will establish a course for architectural critics, what are we going to do about it? As a matter of fact, it is a question in my mind whether, after all, the more profitable criticism of architecture does not, and should not, come from the layman. A trained critic may appreciate its finer subtleties, but after all it is the public taste by which a building must be judged.

Mr. Kendall mentioned one amusing incident in connection with the articles that appeared when Madison Square Garden had just been completed. One critic had raved at some length over the subtlety of McKim, Mead & White's handling of brickwork, calling attention to the disappearance of the diaper pattern in the brickwork near the top of the tower. The "subtlety" resulted from the fact that the brick manufacturer was no longer able to supply the color of brick needed to complete the design.

Thursday, April 3.—H. Van B. Magonigle spoke to an interested audience of architects and students to-day upon memorial architecture, stressing the fact that in the conception of such a design there must first of all be an Idea. Too many of our memorials are simply "pure" architectural detail from classic or Renaissance precedents. Having determined upon the idea for the memorial, the second fundamental is the design of an envelope for this idea which, in mass, in silhouette—whether by day or by night—will result in a pleasing composition, but first, last and all the time, there exists the importance of the Idea.

Saturday, April 5.—Everything seems to be organizing these days—if we keep on, the executive secretary positions created will take care of the unemployment problem. However, Thomas Carlyle, writing about one hundred years ago, had much the same feeling. "Everything has its cunningly devised implements, its pre-established apparatus; it is not done by hand but by machinery. . . . With individuals, in like manner, natural strength avails little. No individual now hopes to accomplish the poorest enterprise single-handed and without mechanical aids. . . . In defect of Raphaels, and Angelos, and Mozarts, we have Royal Academies of Painting, Sculpture, Music; whereby the languishing spirit of Art may be strengthened, as by the more generous diet of a Public Kitchen."

Monday, April 7.—Lunched with Ernest P. Goodrich, the consulting engineer, who is also executive head of the Research Institute for Economic Housing. In somewhat the same way as that followed by the Bauhaus in Dessau, the Institute is carrying on investigations and practical field experiments to determine the best economic methods of building construction. Since the Institute is not an endowed organization—nor do those connected with it seek to make of it an eleemosynary effort—it is undertaking certain problems on behalf of corporations who desire specific unbiassed information along some particular line of building and who will pay for such information. I imagine that the Mellon Institute for Industrial Research in Pittsburgh has much the same function in our present-day development of industry. Broadly speaking, these investigations seek methods and materials by which housing can be achieved with greater speed, greater durability, and a minimum of cost. Parenthetically it may be recalled that 84 per cent of American families have an income of less than $2,000 a year, and cannot afford to spend more than $500 a year on a home. Including land this means a maximum of $4,500 or $5,000 as the cost of the house—and what can be built for that amount? No phase of this great problem—whether structural, financial, hygienic, climatic, or social—is outside the scope of a scientific examination looking toward real betterment. It offers a magnificent opportunity for laying foundations upon which future generations shall build with a knowledge and a wisdom which to us is still largely a groping in the dark.

Tuesday, April 8.—Willis H. Church writes voluminously and informatively from India on his trip around the world: "I had read that Angkor Vat and Angkor Thom were greater than anything the Romans had ever done. Being familiar with the Roman ruins only through photographs, I am, however, ready to believe it. A city whose walls extended more than fourteen miles and which housed more than a million people, who disappeared from the face of the earth without leaving a trace . . . and there stand the ruins in a remarkable state of preservation, some of them almost perfect. They apparently cared little how they laid their pavements or their walls, for no attention is paid to jointing. The disappointing things are the entrances, which are nothing more than ordinary doors. With great gates instead, these temples would have been most monumental. Their use of composition and ornament is without comparison. Everything is symmetrical and with wide, open, and long approaches. Great balustrades terminated by huge fan-shaped Nagas (seven-headed cobras). Huge stone figures, beautifully carved. Walls like tapestry, in that every inch is carved. The stone is a hard gray sandstone, long since turned cinnamon brown. Slim little anchorites peer gravely from niches, bands of dancing maidens, processions of warriors, foot soldiers, elephants, and plant forms of the jungle."

And here are his impressions of Taj Mahal: "I have never gazed on a building before that gave me a feeling of total dissatisfaction with all other buildings, such as this did. Tourists who had no special interest in buildings were fascinated by this one and frankly said so.

"The Taj is approached by a great cloistered court, which in itself is beautiful. Entering through a great gate, the tomb itself fairly kicks your feet from under you. Further, the building is unique in that it cannot be photographed, painted, or drawn to the satisfaction of any one who has ever seen it. It is simply impossible to catch the life, the vibrance of it.

"Beautiful landscaping, superb composition. It stands at the end of two rows of cypresses between which runs a reflecting pool always mirroring the building perfectly. Standing directly under the dome of the entrance gate one gradually becomes aware of the composition. It must have been drawn or studied from this point. Any way you measure sight lines they pass directly through the tiny door of the tomb chamber—the perspective is perfect and so skilfully handled that as you approach from this point these lines still appear to pass through this door. Hence, whether you wish to or not, your mind is never allowed to forget the fact that you are gazing at a tomb in the centre of which lie the remains of the beloved wife of Shah Jehan.

"We wisely did as we were told and went to the building first at sunset. The building seemed to be alive, a thing with a soul. It did not seem to rest on the ground but rather to float just above it. In the setting sun it looked like old ivory, and the shadows in its great arches were actually vibrating . . . darker at the bottom in spite of the reflected light from the white marble pavement. The effect was gained by means of a clever architectural device which is simplicity itself. The back of the great niches are ribbed like the English fan-vaults. At the spring line these ribs gradually flatten until they disappear. This elimination of the shadow, leaving a highly polished white marble surface to catch the reflected light, does the trick.

"As the day faded into twilight and then darkness, the soul seemed to die out of it, and it seemed what it was—a tomb—floating above the ground, a symbol of death, the leaving of this earth and drifting away into another.

"We returned again at late night, for we had arranged our trip to be there in the full of the moon. It was even more magnificent. It now *was* the symbol of death—cold, austere, proud, motionless, greenish white. The light from the moon was reflected so strongly by the building that it actually had a halo about it . . . the moonlight appeared to come from behind it rather than from above.

"I stayed until 2 A. M., and repeated this procedure every night I was there, getting for my pains some excellent moonlights on two-hour exposures, hence, I can prove the halo.

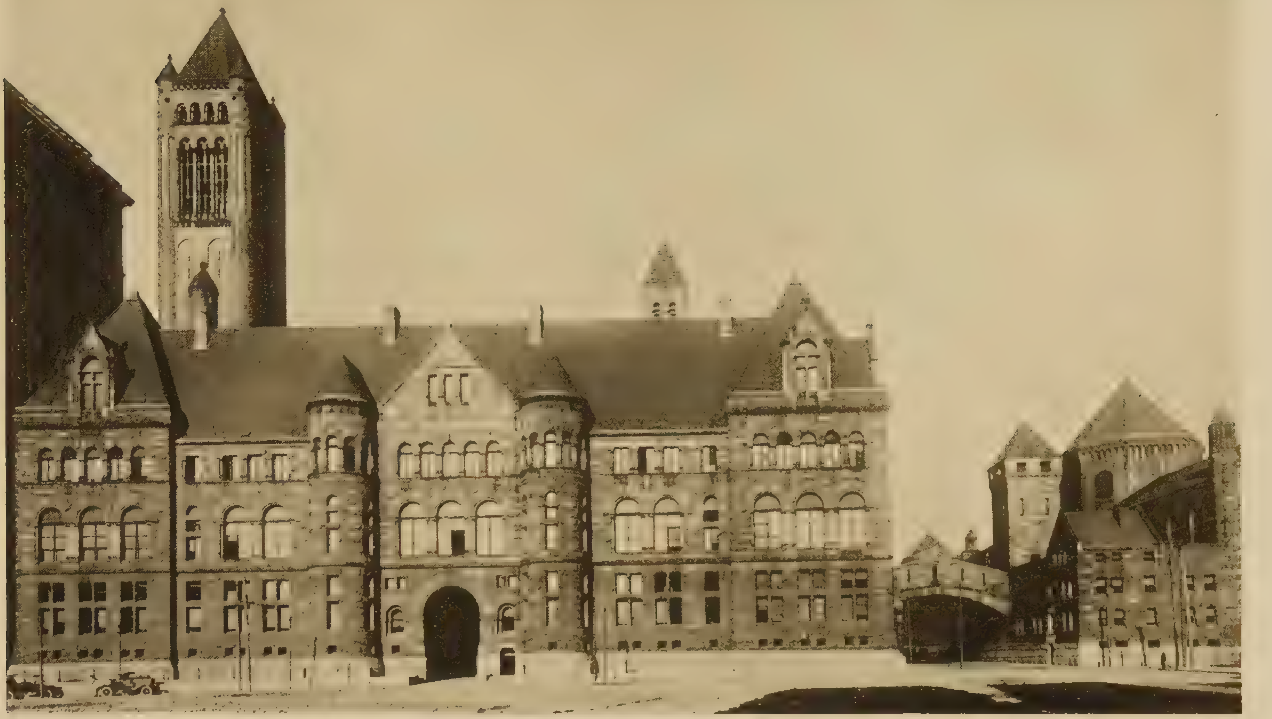
"The ornament is entirely in keeping with the tomb's purpose—delicate, lace-like, and feminine. No relief ornament detracts from the vault ribs, but is all inlay of semiprecious stone of dull greens, browns, blacks, reds, and yellows—beautiful stuff.

"Within, and surrounding the tombs, is a marvellous stone grille of the most intricate pattern and perfect craftsmanship, whose ornament is also inlay. The tombs themselves, of white marble, with inlay, have classic mouldings."

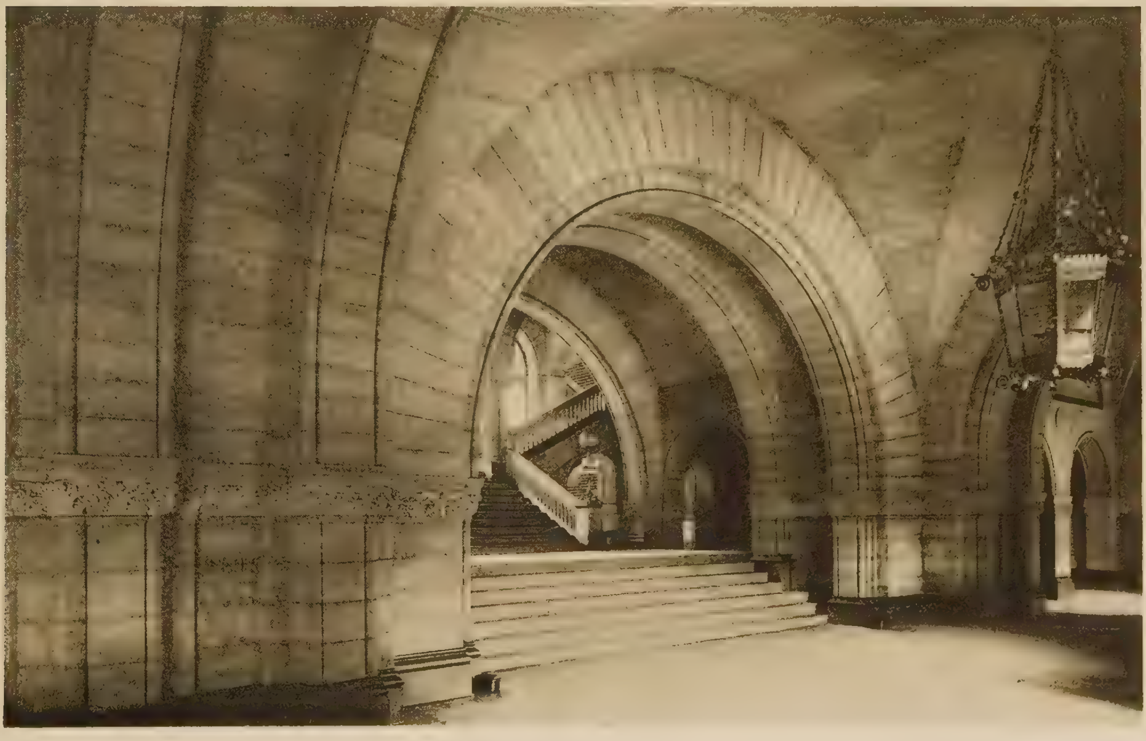
Thursday, April 10.—Philip Sawyer gave this week's lecture in the New York University series, and we learned about banks from him. In the design of bank buildings possibly, even more than in most architectural work, it is of first importance to get the requirements clearly stated. Guy Lowell once said: "Having gotten the requirements clearly stated, an architect's task is half done." Mr. Sawyer also stressed, with regard to bank plans, the principle enunciated by Daniel Burnham when he said: "Make no small plans." As Mr. Sawyer says: "Once having secured all the requirements, the important thing is to work out an ideal scheme. A compromise may have to be made later, but never start with a compromise." Banks grow at the rate of 6 to 8 per cent a year—that is the country's average; many of them grow much faster.

Lest We Forget:

The architectural press devotes much of its space to current work, a little to that which is very old. In between the two fields lies a forgotten wealth of achievement, to which we might glance now and then to verify our course of progress.



Allegheny County Court House and Jail, Pittsburgh. Designed by H. H. Richardson and built in 1882. The demolition of the jail and the connecting "Bridge of Sighs" is contemplated to make way for new street developments. Below, the vestibule and main staircase in the court house



One of the greatest problems is to provide for future expansion. A good start toward this is made by taking off the main floor all bookkeeping, all machine work, all certification and bank-runner connections, and if possible, most of the officers.

R. F. Bach is back at the Metropolitan Museum of Art after a year's travel abroad. At The League to-night he told us of some of his reactions with regard to architectural functionalism as one meets it in Germany and Central Europe; of the European designers' resentment over our pirating of designs in the minor arts.

Saturday, April 12.—Roderick Seidenberg has an enthusiastic appreciation of Soviet architecture in *The New Freeman.* He says: "With us the development of a national character in architecture is subject to a slow, uncertain process of individually significant contributions. In Russia every aspect of building construction and planning is at least theoretically controlled and systematized; and doubtless with the application of energy and intelligence this scheme of things will in time be fully realized."

Speaking of the earlier art of Russia he says: "The art of that early period lies outside our modern, sharply focussed consciousness. All the vast rhapsody of dome and arch, of vivid coloring and looming shadow, seems unreal and empty, like a barbaric backdrop before which the modern drama of logic and geometry enacts itself. In a significant sense the ancient structures not only provided shelter against the elements, they were integrated with those elements, needing sunlight and snow and the darkness of night to express their inner meaning. To-day sunlight is a matter of hygiene, and snow a job of street cleaning." . . . "Thus Russian designers have ignored modern ornament, since for them all ornament is irrelevant and bourgeois. Similarly the principle of symmetry—derived from a formal, essentially aristocratic and monumental architecture—has been discarded as arbitrary and meaningless. The rigorous theory of modern Russian work demands a disavowal of all æsthetic considerations. Scale and proportion, taste and propriety are no longer elements of design; and everywhere the emphasis is upon function, efficiency, economy, and logic." . . . "The younger revolutionary designers have boldly and consciously chosen a peculiarly forbidding gray for the color of their buildings. In the same spirit, the newly erected quarters for workingmen in the environs of Moscow are virtually barracks for an industrial army; but already the workingmen are demanding that future dwellings be redeemed from this sinister, institutionalized appearance."

In that last sentence lies apparently an indication of some hope for the architectural future of Russia, for since man cannot live by bread alone, neither can he live in and about structures that satisfy only the material side of his nature.

Monday, April 14.—Building construction seems definitely to have taken a turn for the better. The Straus figures show a 46 per cent gain in March over February. This is decidedly better than the normal expectation of increase from February to March—37 per cent. Building material prices were generally firm in March, with increases in cement, brick, hollow tile, lime, sand and gravel, cast-iron pipe and sewer pipe. There was a decrease in unemployment of over 2 per cent, although unemployment is still 23.5 per cent greater than in March, 1929.

Tuesday, April 15.—In the March issue of *The Structural Engineer*, an English journal, there is an informative article about the Great Pyramid. It contains about 85,000,000 cubic feet of masonry, and was built in thirty-six months' actual working time. Incidentally, the three months per year in which this work was carried on were in accordance with the Hoover method of utilizing public works to equalize employment.

Thursday, April 17.—The ninth lecture in the New York University series was given to-day by Kenneth Murchison on the subject of apartment-houses. Mr. Murchison would have no trouble filling a lecture hall anywhere and at any time, speaking on any subject. He stressed the great importance of the plan. "If you finally succeed in working out a plan which is convenient for the tenant and profitable for the owner, the appearance of the façade is a matter of practically no consequence." Mr. Murchison looked at Dean Bossange after saying this, and suggested that perhaps it might be considered inadvisable to make such a statement in a gathering largely made up of architectural students. The dean apparently thought so, nodding acquiescence, upon which Mr. Murchison said: "I withdraw the remark." One of the essentials in apartment-house design is to be able to give the client not only rough preliminary drawings, but also a complete set-up which will show what proportion of the whole block is rentable area, what the building will cost to construct, and to maintain, what class of tenants may be expected and, therefore, what character of building will be best, and what return may be expected upon the investment.

This evening, at The League, J. Scott Williams discoursed on composition and painting—both in oils and in water-colors. Arthur Covey contributed significant questions that led the speaker through various phases of the subject. Scott Williams always gives me the impression, when equipped with pencil and paper or blackboard and chalk, that he could prove any theorem whatever. If any one ever questions any of his reasoning, the questioner is led at once through such depths of abstruse reasoning as to be willing on the spot to agree to anything rather than strain his mind further.

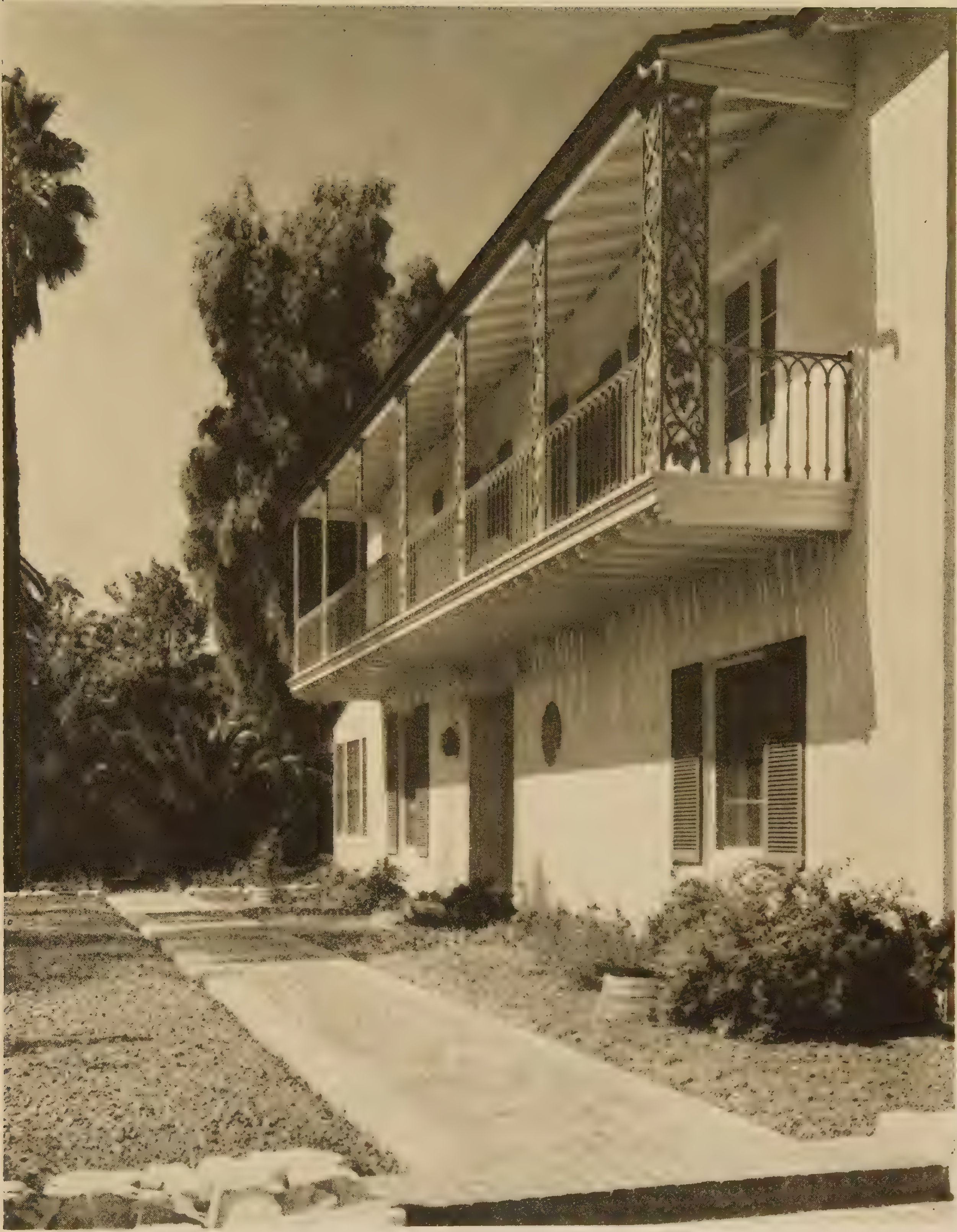
Friday, April 18.—To Princeton and under the able guidance of George Wintringer, went through the dining-halls designed some years ago by Day & Klauder. The kitchens and their butcher shop, bake shop, provision for food storage, etc., are apparently the very last word in hotel equipment. I was interested also in seeing the two faculty-house groups—the first by Park & Morgan, and the new one by Aymar Embury, in which is solved the difficult problem of combining apartment quarters with a two-story-residence type of exterior.

Saturday, April 19.—Mr. Charles Scribner died to-day at one o'clock. There is significance in that hour of his passing—the exact end of the business week, when tasks have been finished or put aside for a period of rest.

To few men have fallen the burdens of chief responsibility in business at such an early age—the sudden death of an older brother almost immediately after Charles Scribner came out of Princeton transferred to his shoulders a burden that would have crushed most men. Instead, it stiffened him to a degree of resourcefulness which enabled him not only to carry on the business but to lift it to new heights of success and idealism through a long and active life.

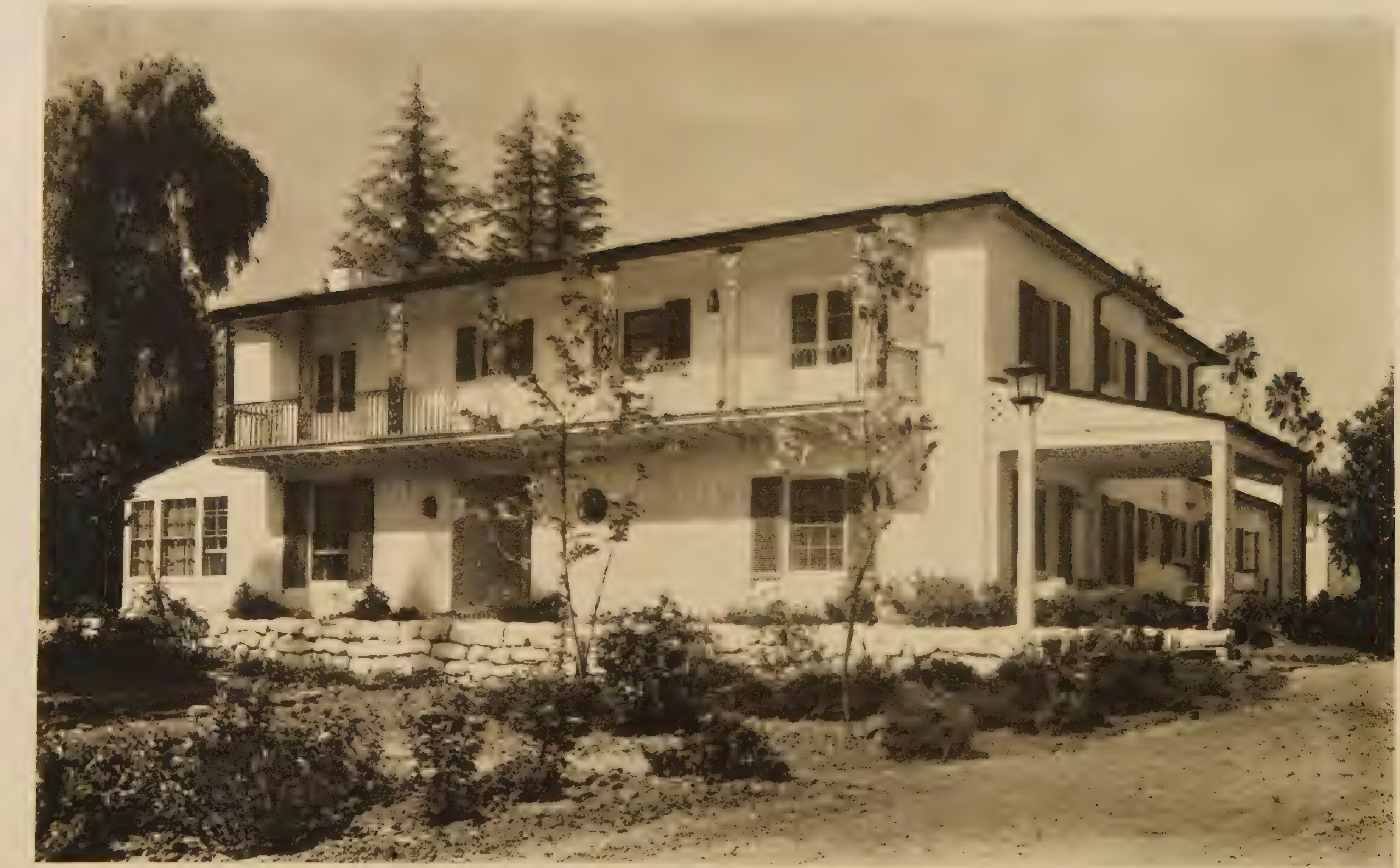
As an editorial in the New York *Herald Tribune* says of him: "When he put his imprint upon a book it was a sign that he believed in its literary merit and he backed it with the fervor of a man for whom the things of the mind held a peculiar delight, a potent stimulus."

In these days when commercialism rides supreme in nearly every phase of life, it is and will continue to be an inspiration to look back at the life and work of one who, not only unmoved by the materialistic side of publishing but actually jealous of and fearful of its influence, set his mind and purpose always to the achievement of that which should be fine and enduring. He loved the beautiful things of life. He would have nothing else for himself and he would not stoop to the making of anything else for others. In his hands a torch has been held high and unwavering. So long as the memory of Charles Scribner endures in the minds of those who were privileged to work with him, so long will that torch burn brightly aloft.



Photographs by George D. Haight

HOUSE OF J. E. KILLIAN, RIVERSIDE, CALIF.
GARRETT VAN PELT, JR., ARCHITECT



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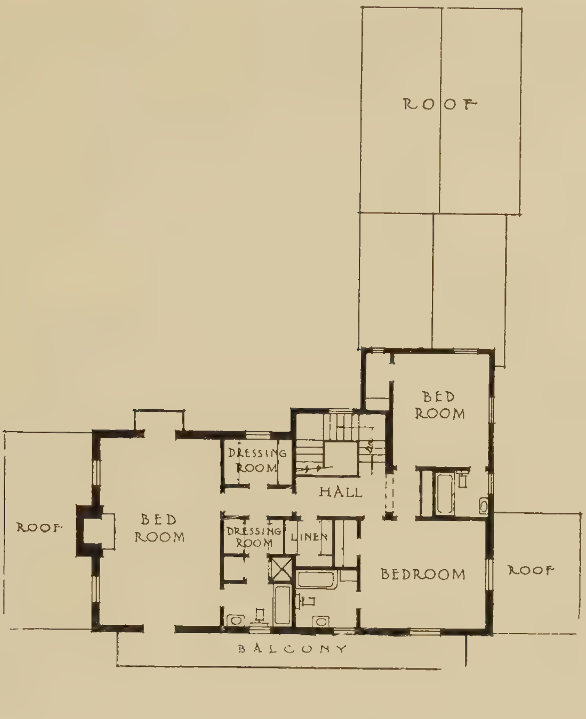
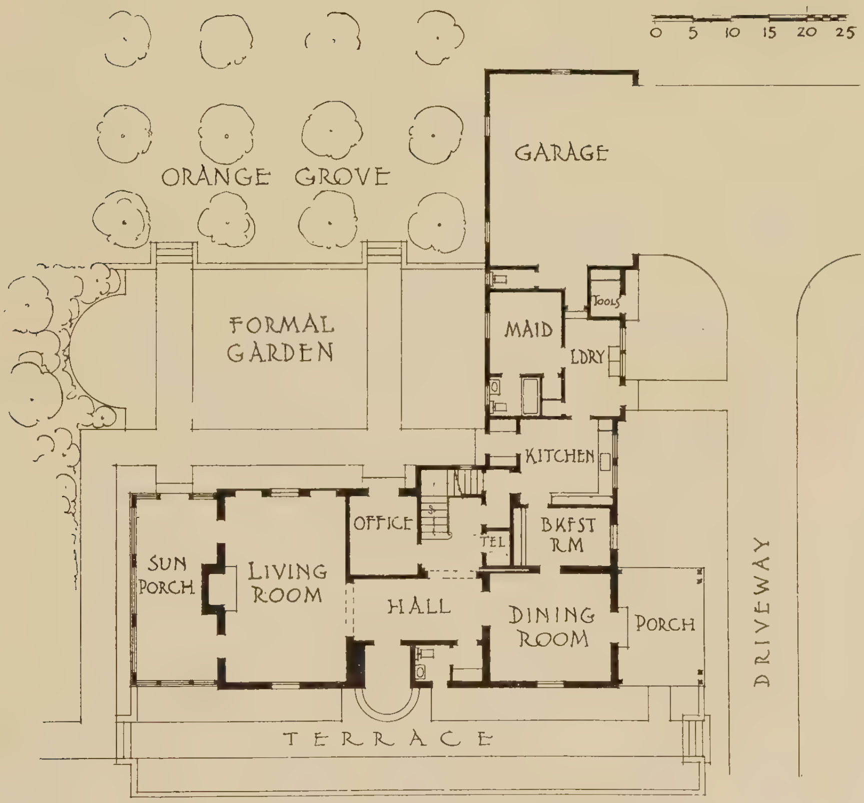
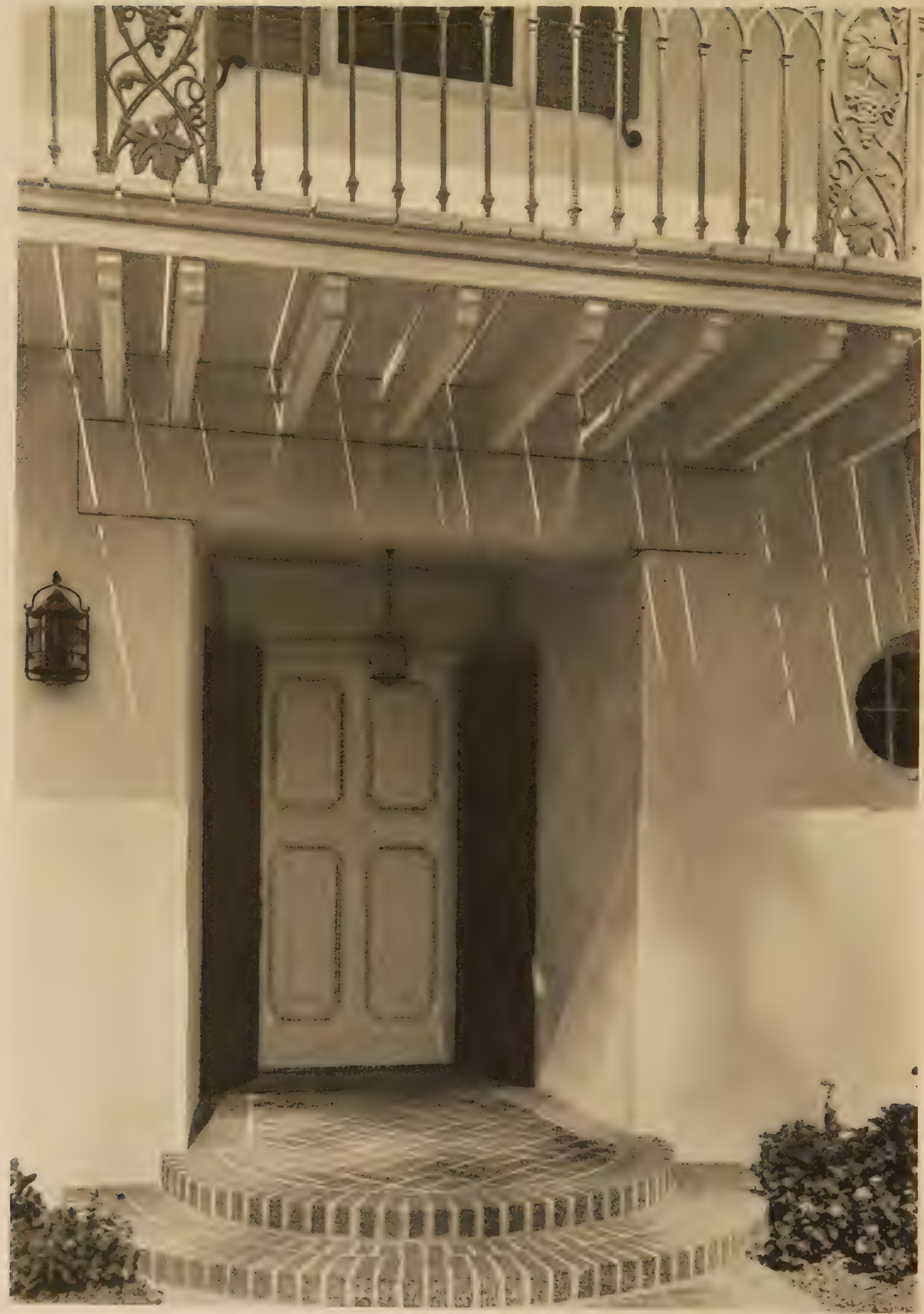
GARRETT VAN PELT, JR., ARCHITECT





House of J. E. Killian, Riverside, Calif.
Garrett Van Pelt, Jr., Architect



House of J. E. Killian, Riverside, Calif. GARRETT VAN PELT, JR., ARCHITECT

ARCHITECTURE'S PORTFOLIO OF ENTRANCE PORCHES

THE FORTY-FOURTH IN A SERIES OF COLLECTIONS OF PHOTOGRAPHS ILLUSTRATING VARIOUS MINOR ARCHITECTURAL DETAILS

With this issue the Portfolio, which has proven itself of constantly growing value, is doubled in number of pages and quantity of material. Architects tell us that these collections are useful not only for their own reference files but also as aids in clarifying the client's visualization of the type of thing he desires or that which the architect urges as fitting or unsuitable to the problem in hand.

Forthcoming Portfolios will be devoted to the following subjects: Patios (July), Treillage (August), Flagpoles and Holders (September), Casement Windows (October), Fences (November), and Gothic Doorways (December). Photographs showing interesting examples under any of these headings will be welcomed by the Editor, though it should be noted that these respective issues are made up a month in advance of publication dates.

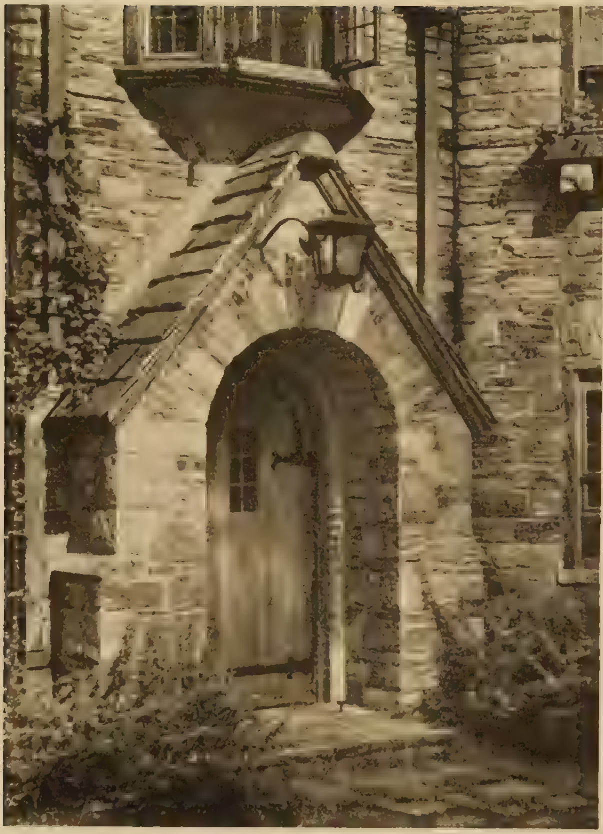
Subjects of Previous Portfolios

1926–27
DORMER WINDOWS
SHUTTERS AND BLINDS
ENGLISH PANELLING
GEORGIAN STAIRWAYS
STONE MASONRY TEXTURES
ENGLISH CHIMNEYS
FANLIGHTS AND OVERDOORS
TEXTURES OF BRICKWORK
IRON RAILINGS
DOOR HARDWARE
PALLADIAN MOTIVES
GABLE ENDS
COLONIAL TOP-RAILINGS
CIRCULAR AND OVAL WINDOWS

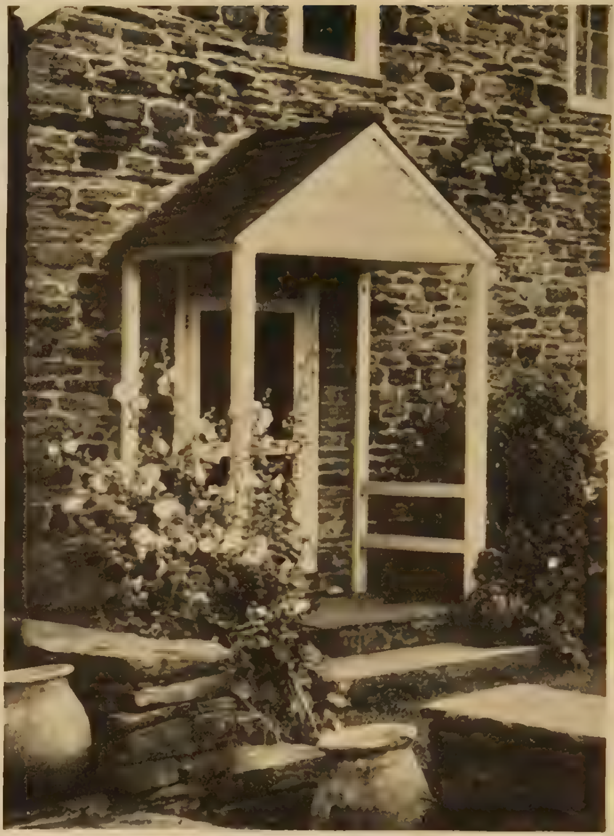
1928
BUILT-IN BOOKCASES
CHIMNEY TOPS
DOOR HOODS
BAY WINDOWS
CUPOLAS
GARDEN GATES
STAIR ENDS
BALCONIES
GARDEN WALLS
ARCADES
PLASTER CEILINGS
CORNICES OF WOOD

1929
DOORWAY LIGHTING
ENGLISH FIREPLACES
GATE-POST TOPS
GARDEN STEPS
RAIN LEADER HEADS
GARDEN POOLS
QUOINS
INTERIOR PAVING
BELT COURSES
KEYSTONES
AIDS TO FENESTRATION
BALUSTRADES

1930
SPANDRELS
CHANCEL FURNITURE
BUSINESS BUILDING ENTRANCES
GARDEN SHELTERS
ELEVATOR DOORS
ENTRANCE PORCHES

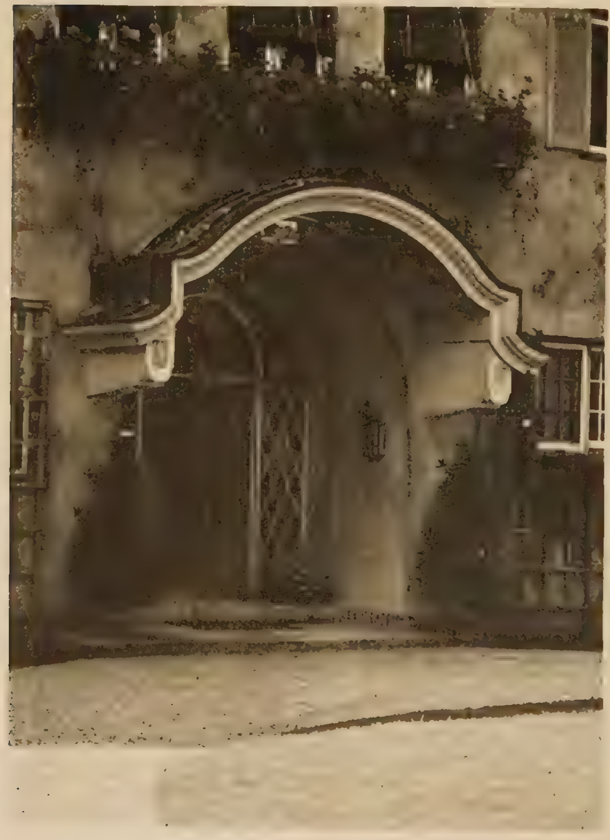


OFFICE OF JOHN RUSSELL POPE



LEWIS E. WELSH

HOWARD SHAW



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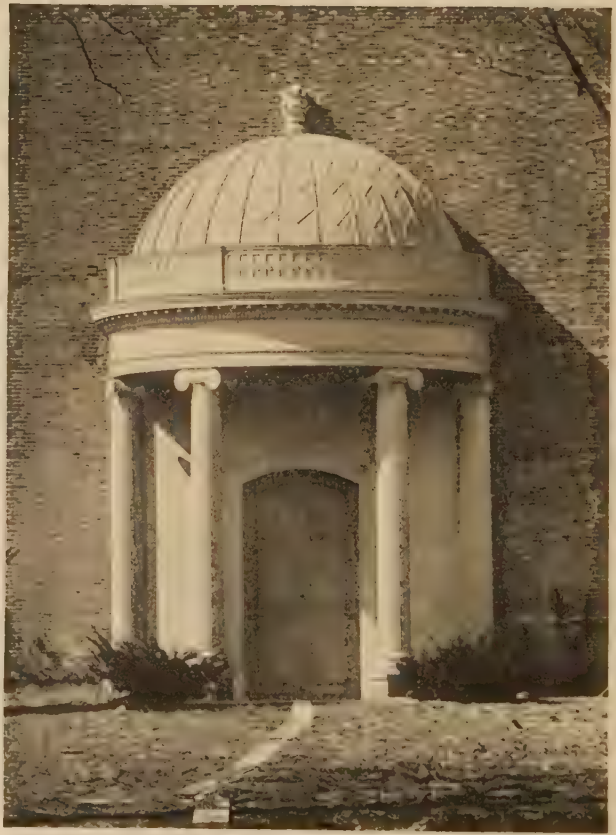
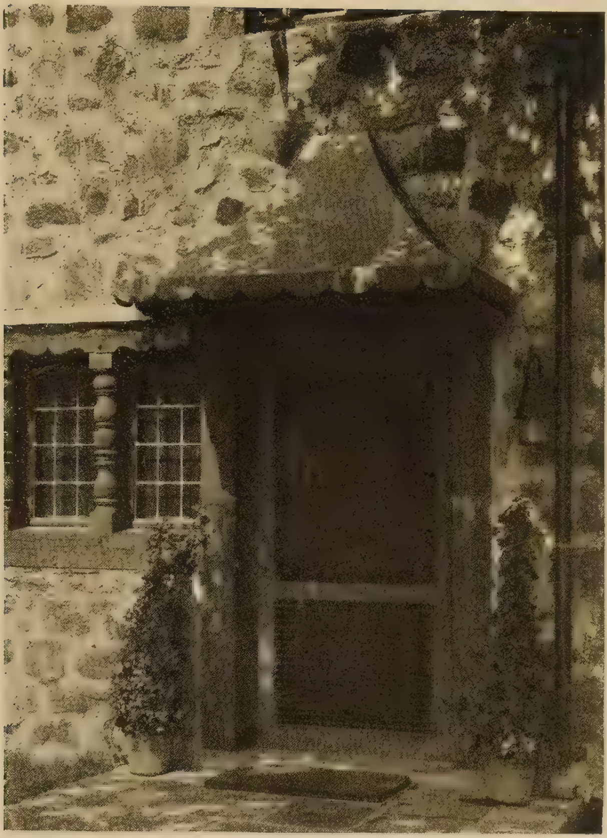
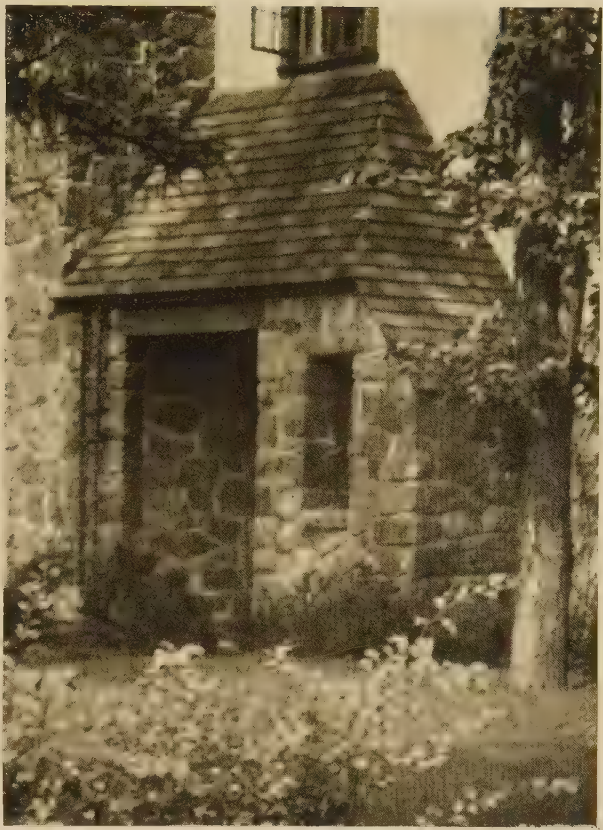


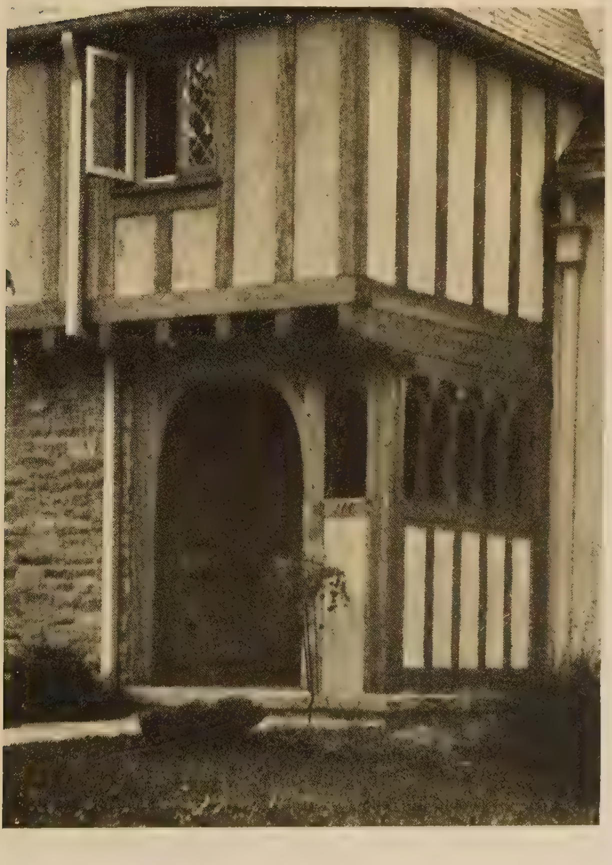


BENJAMIN W. MORRIS



TOOKER & MARSH

WILLIAM GORDON BEECHER



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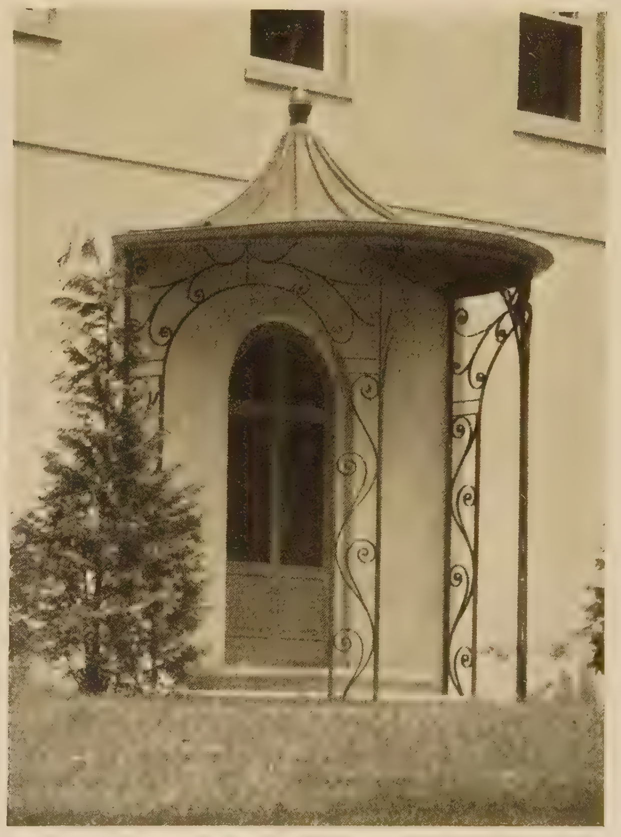
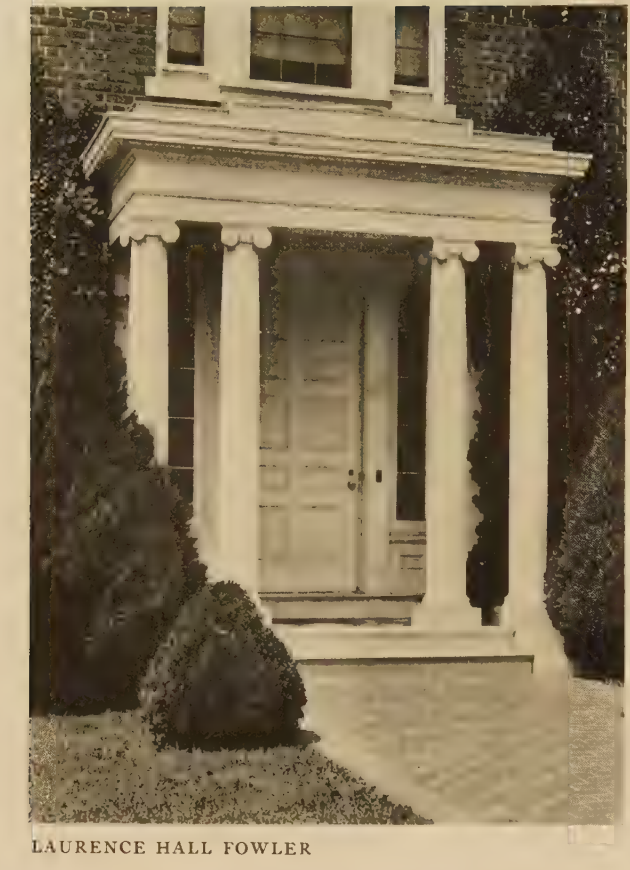
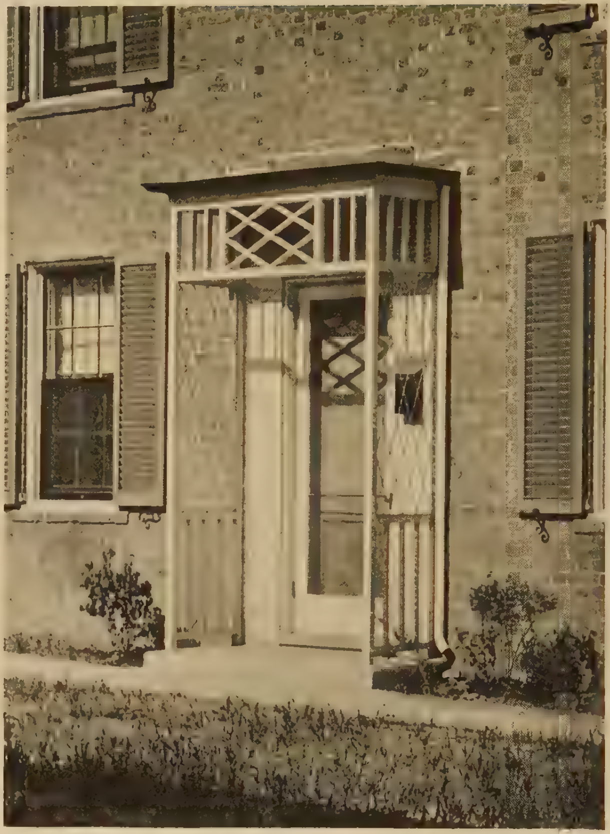


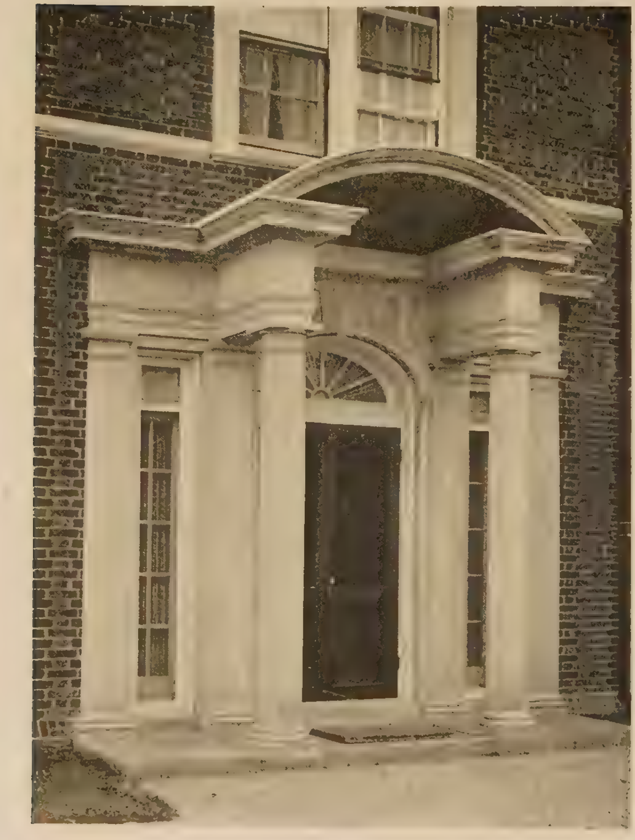


LAURENCE HALL FOWLER



EDMUND B. GILCHRIST

ROGERS & ZOGBAUM



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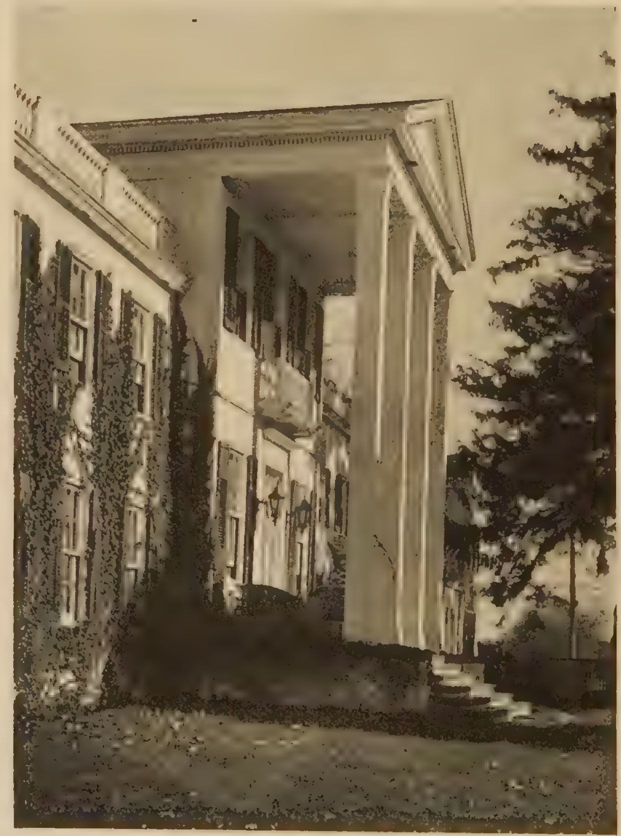

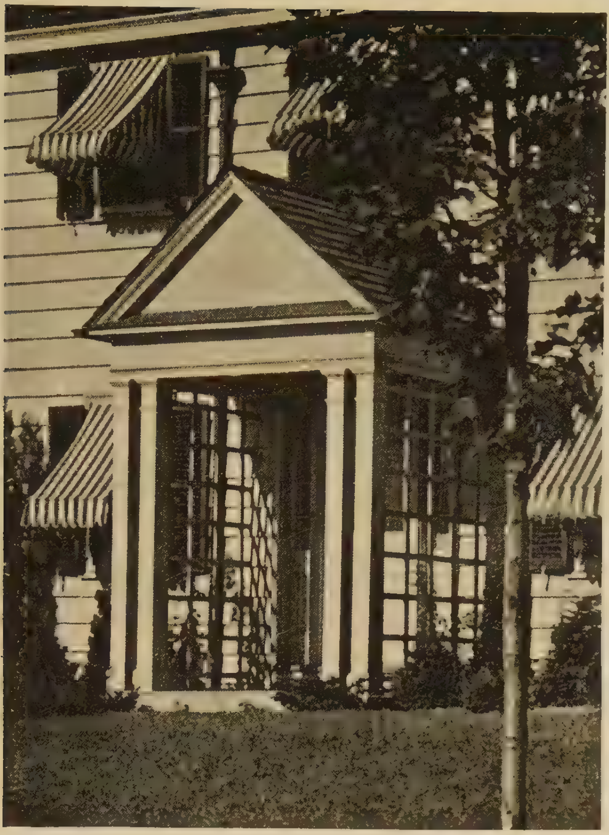

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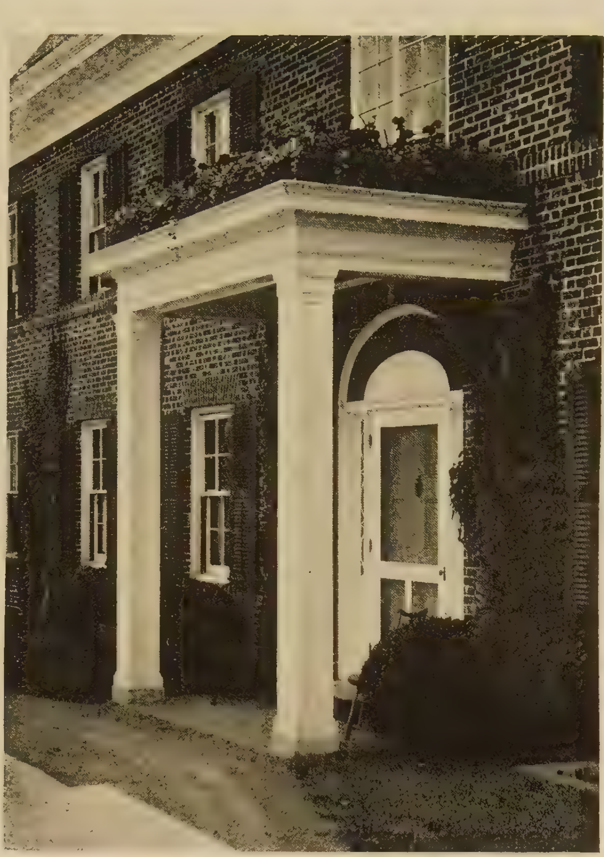
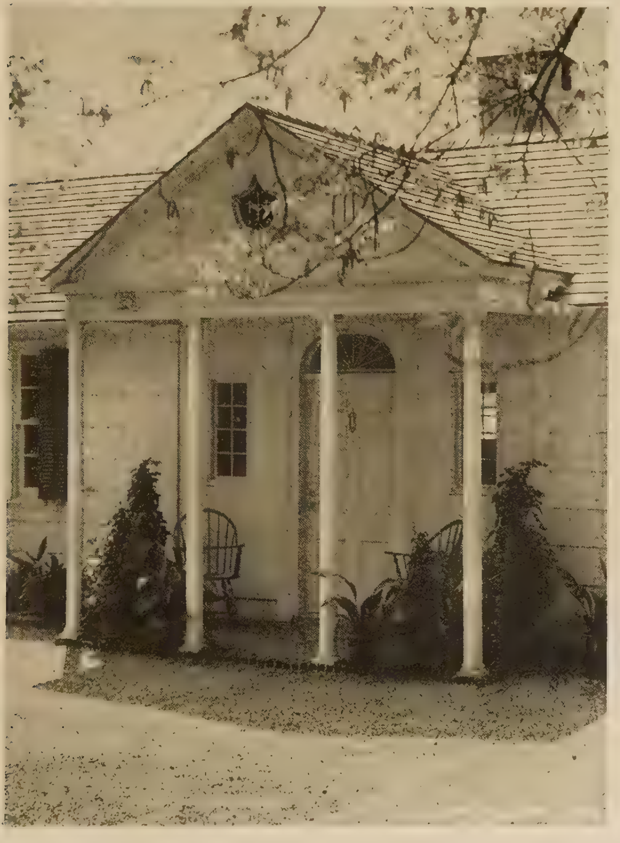


CROSS & CROSS

CHARLES S. KEEFE



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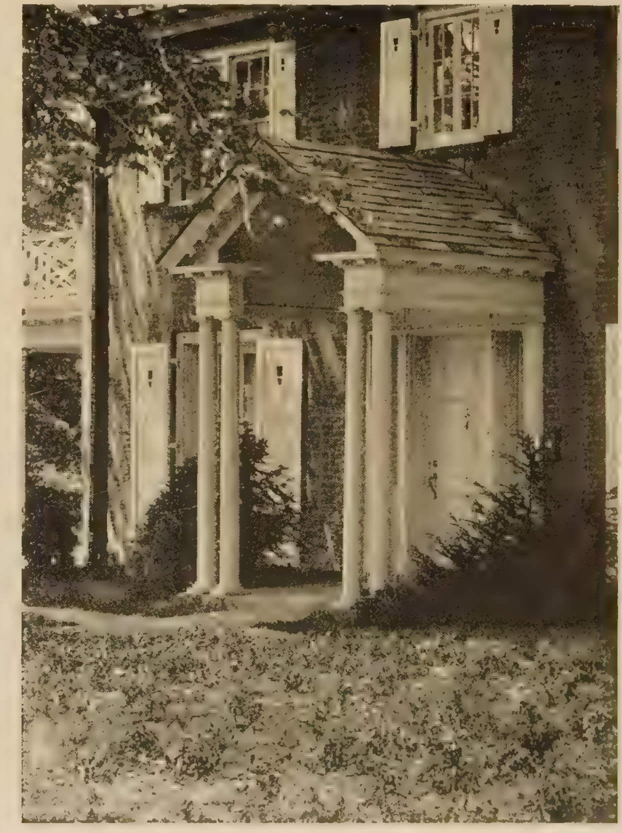

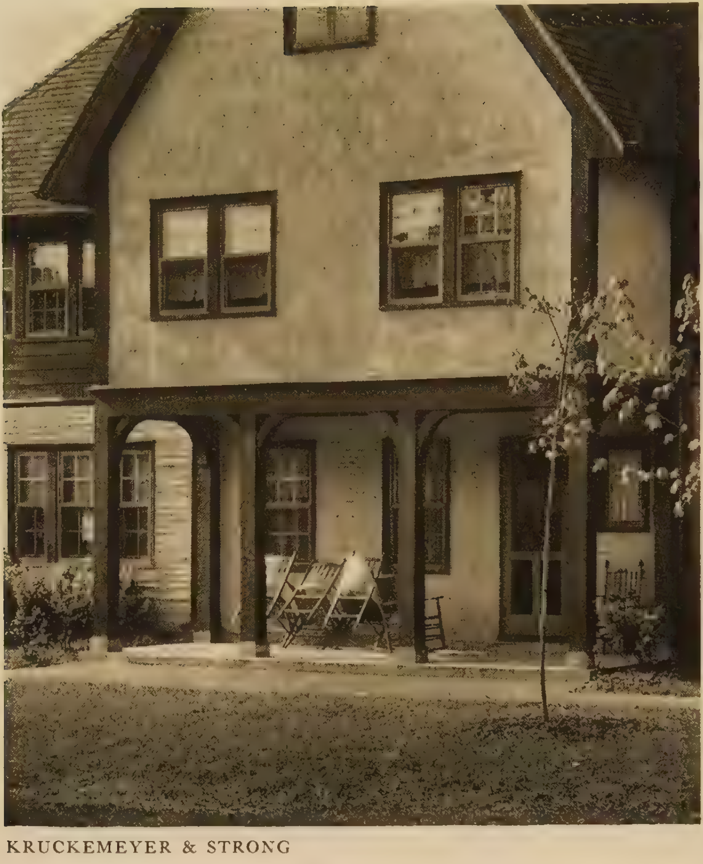

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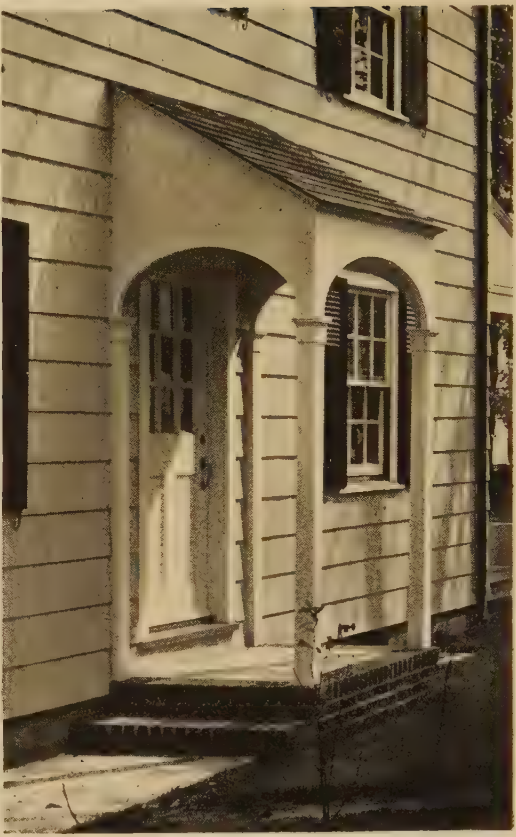
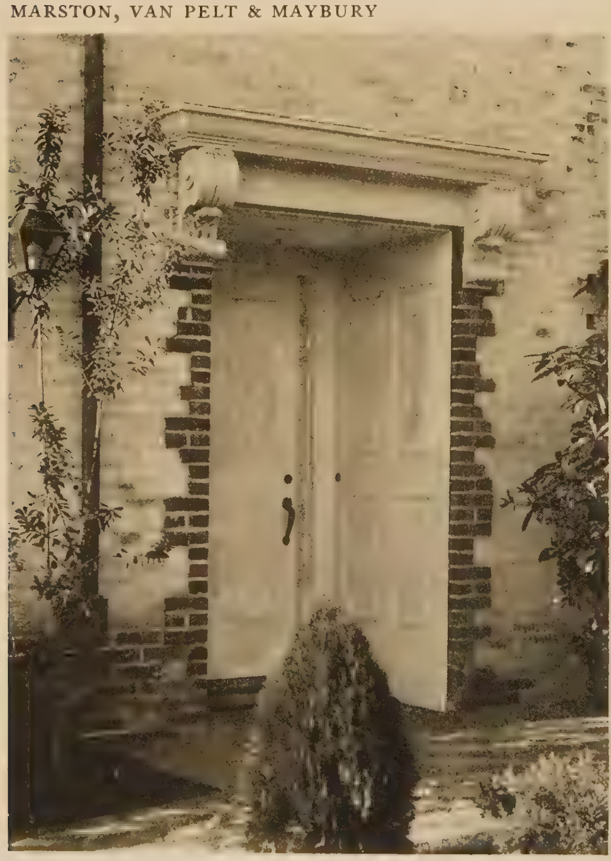


CLARENCE S. STEIN

MARSTON, VAN PELT & MAYBURY



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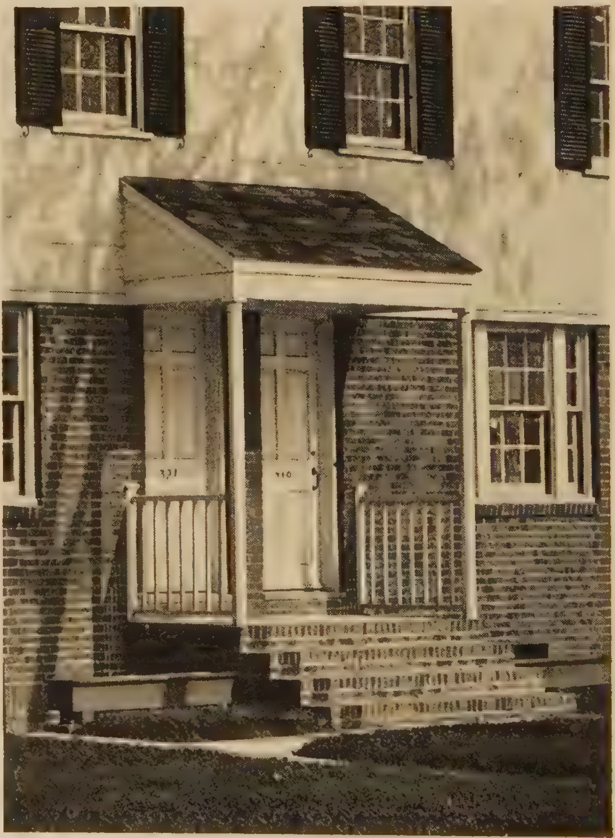

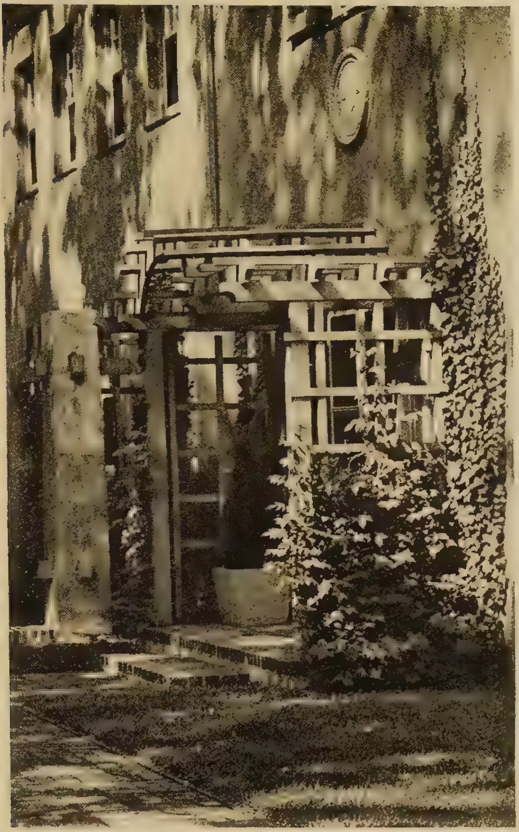

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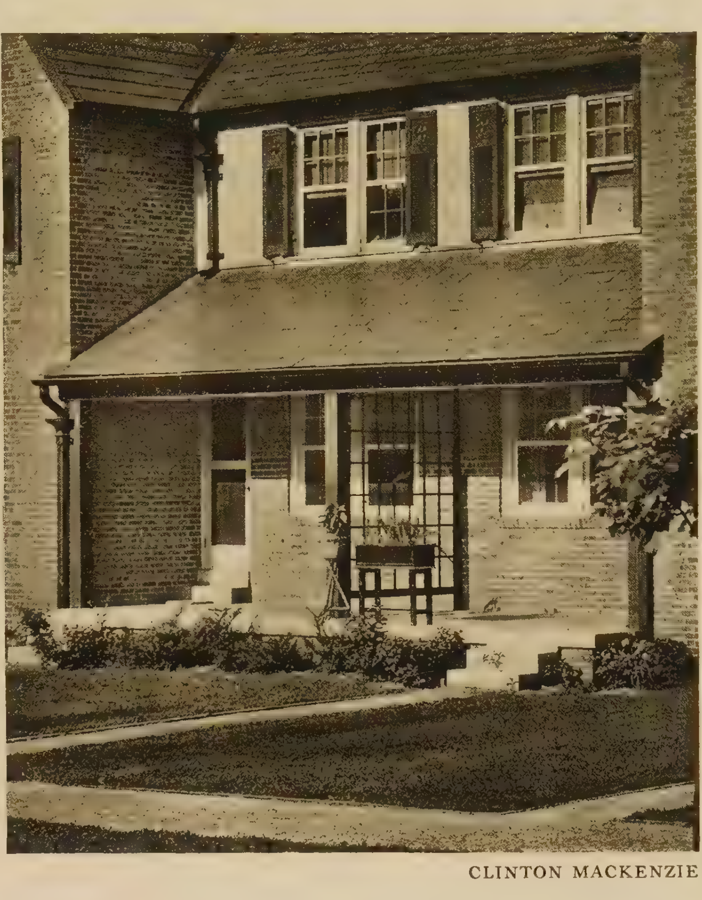

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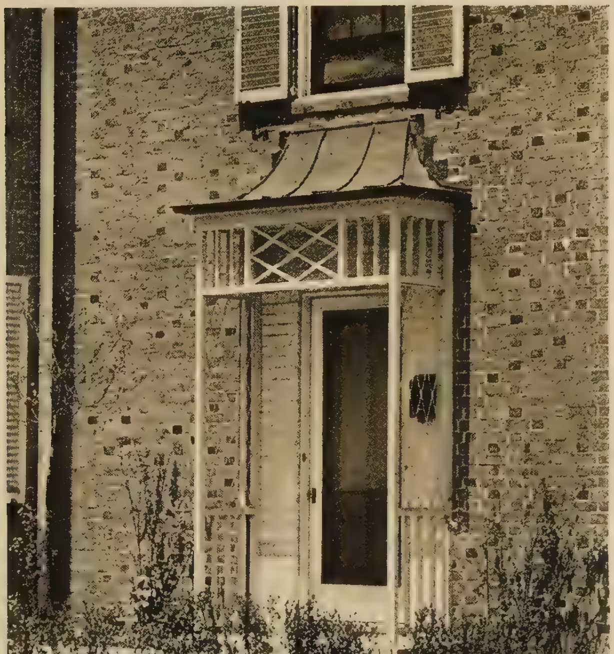

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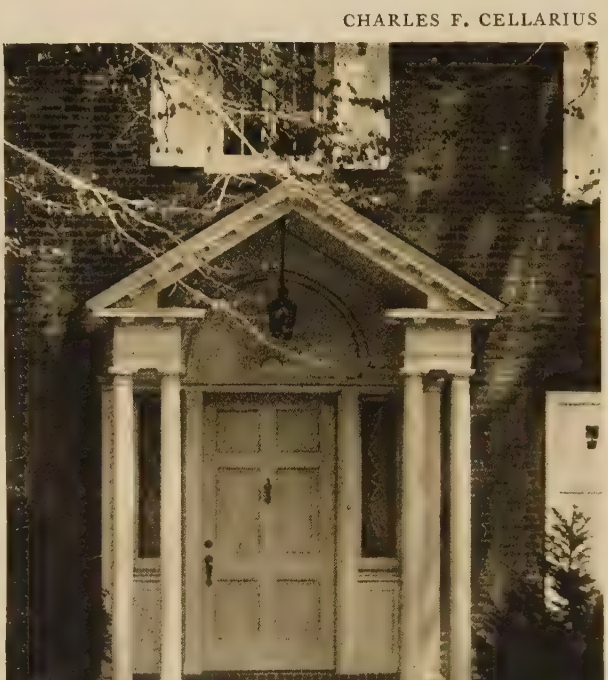

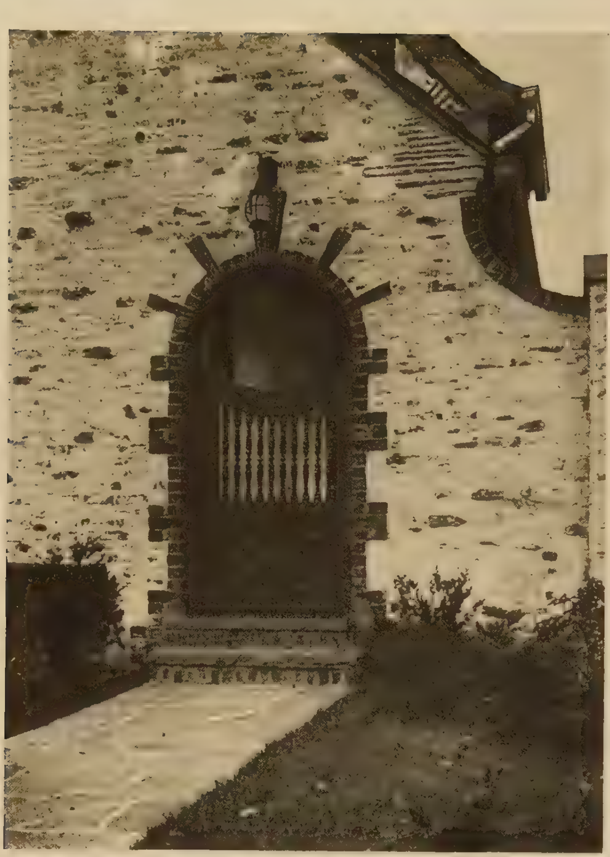

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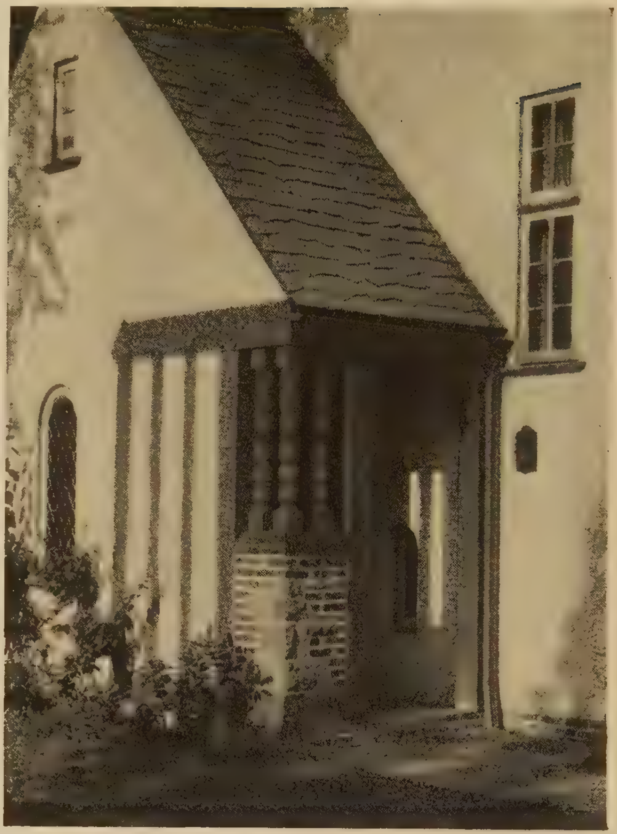

BAGG & NEWKIRK

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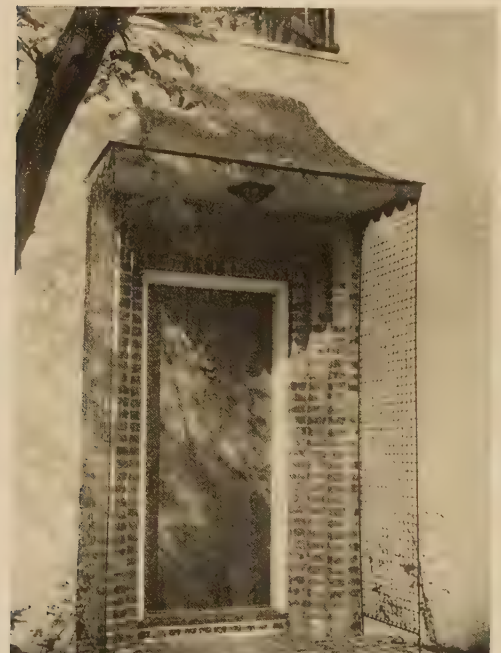

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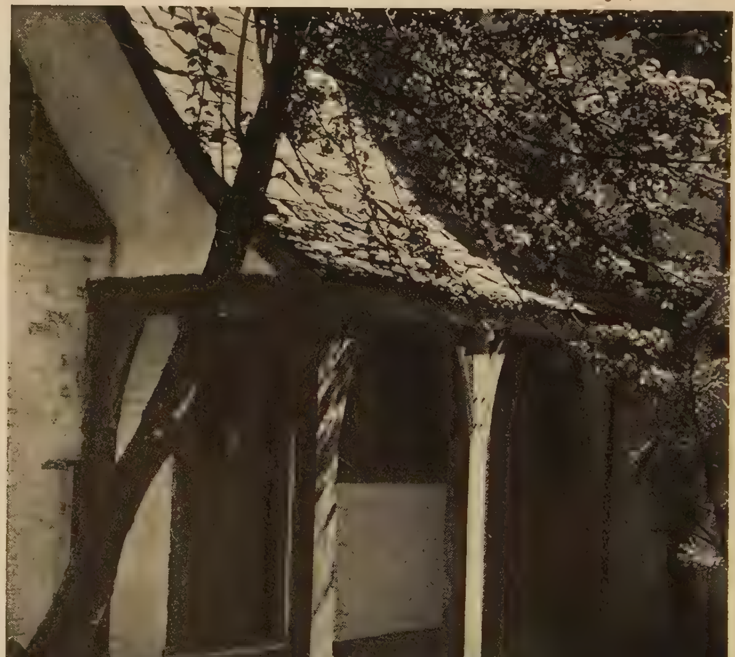

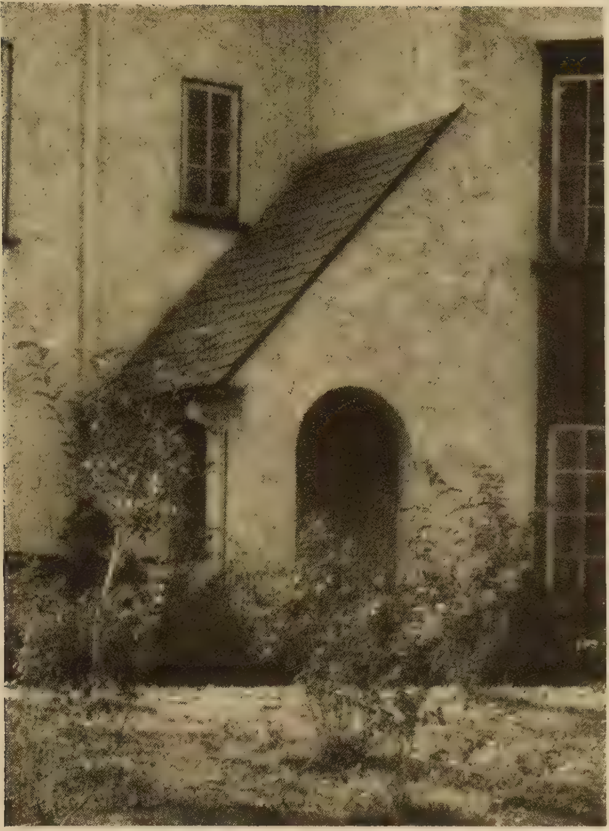

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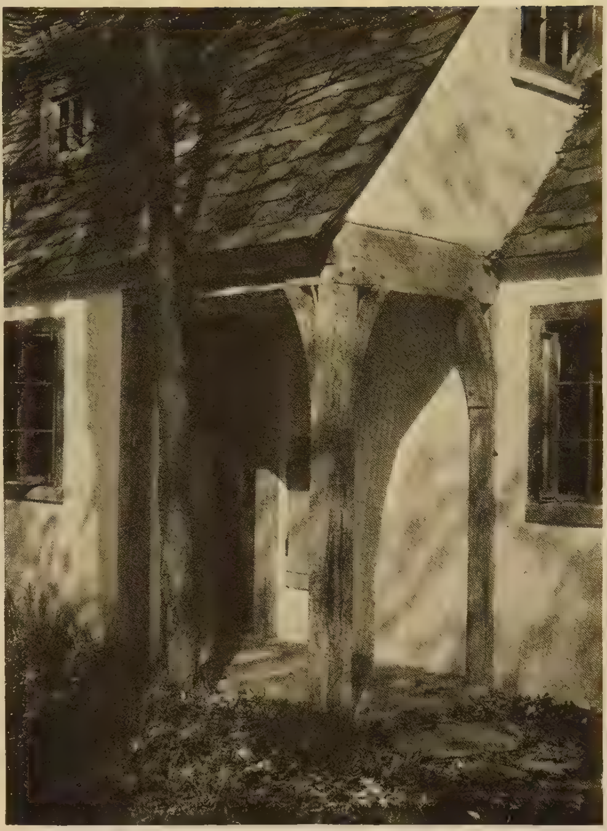

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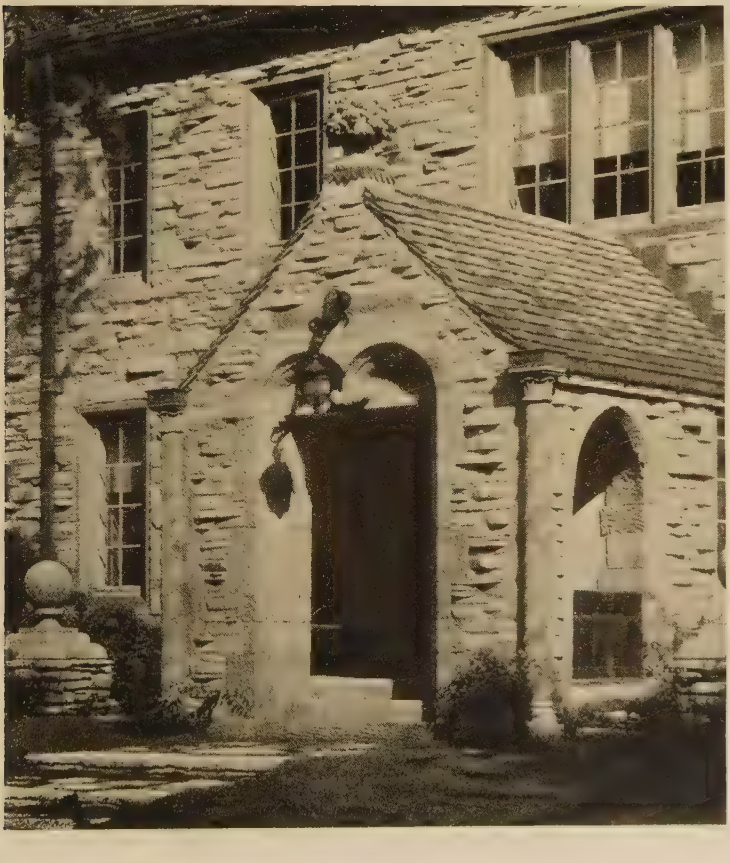

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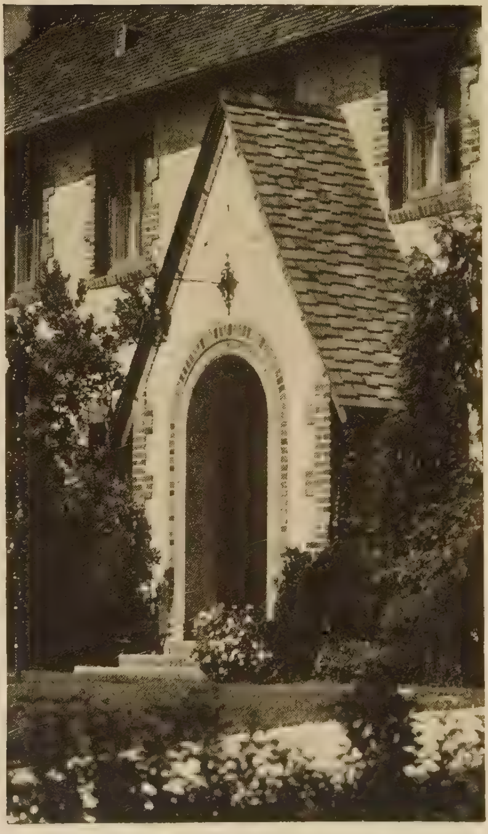

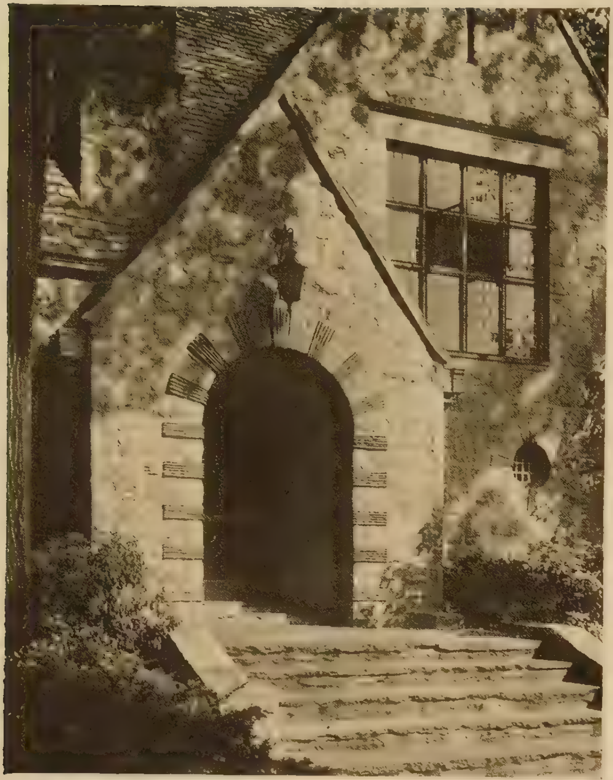

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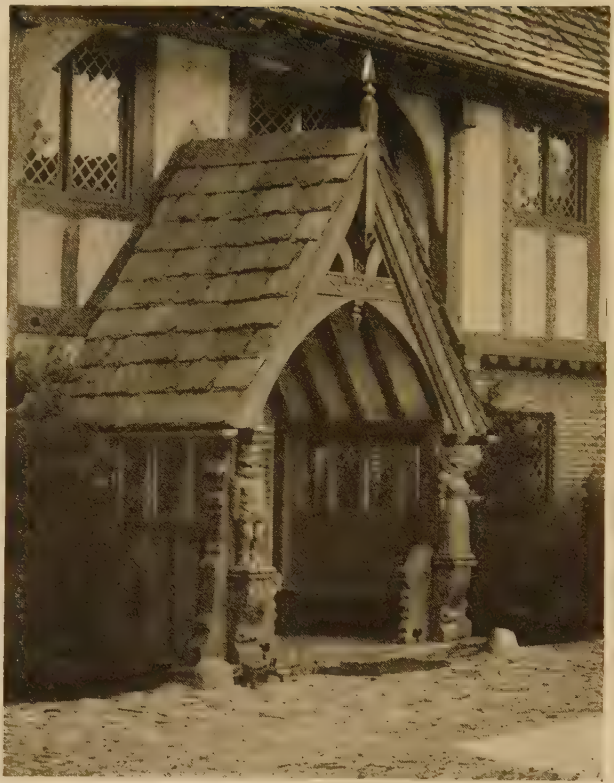

MEADE & HAMILTON

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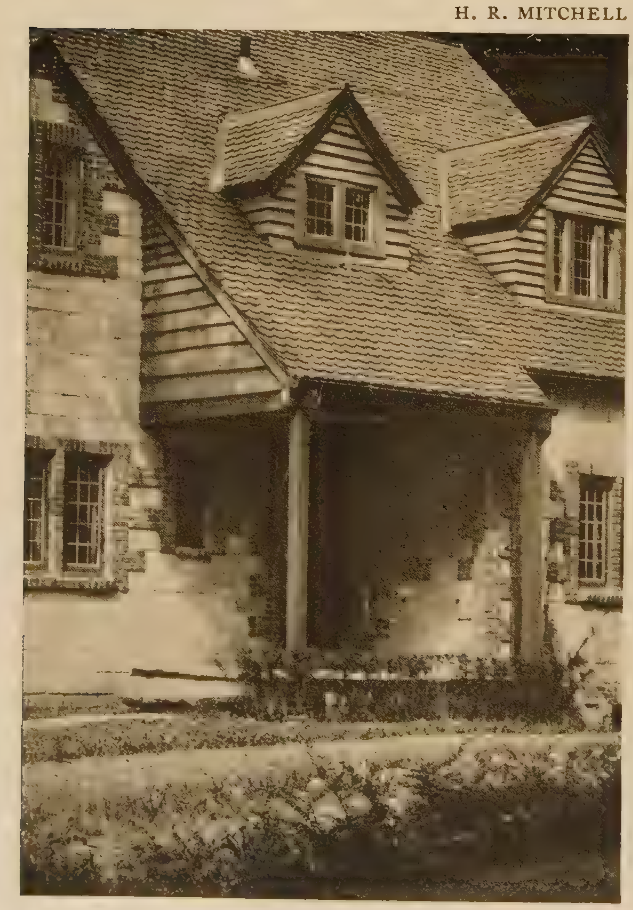

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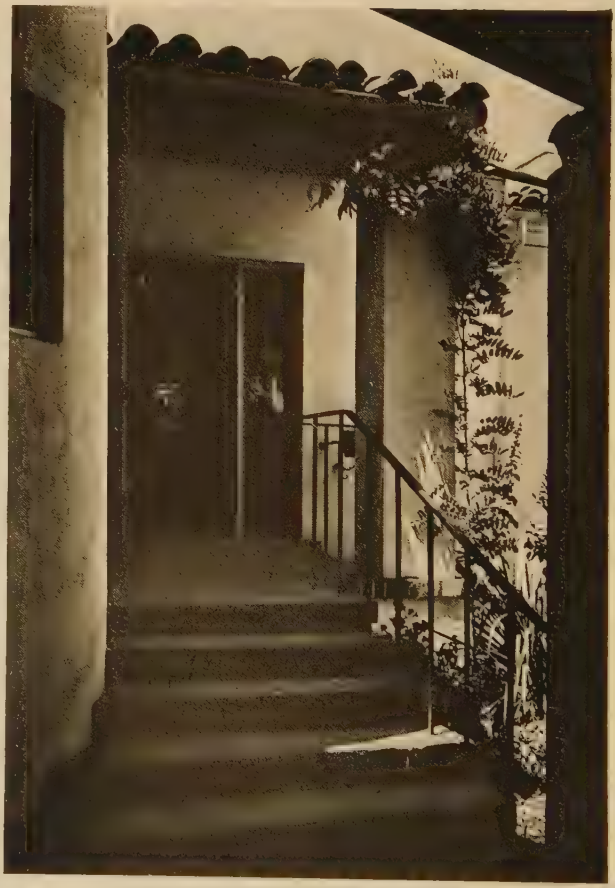

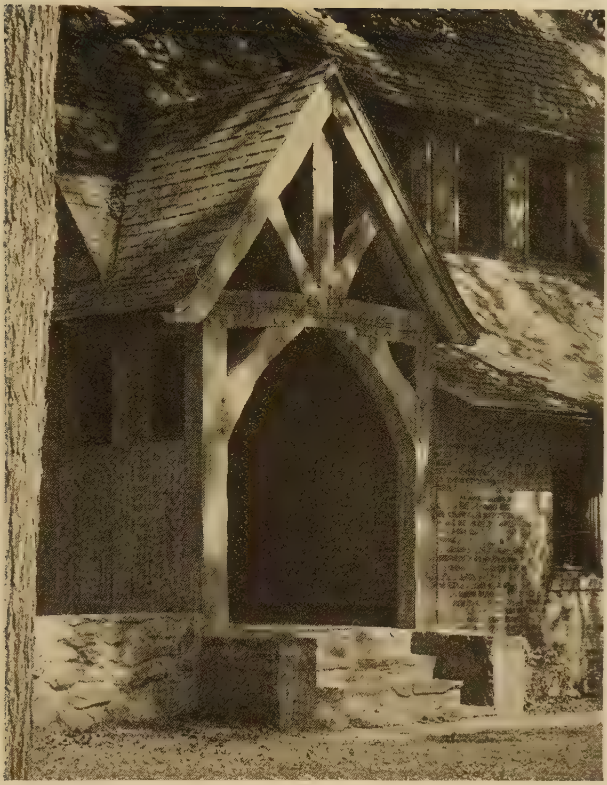

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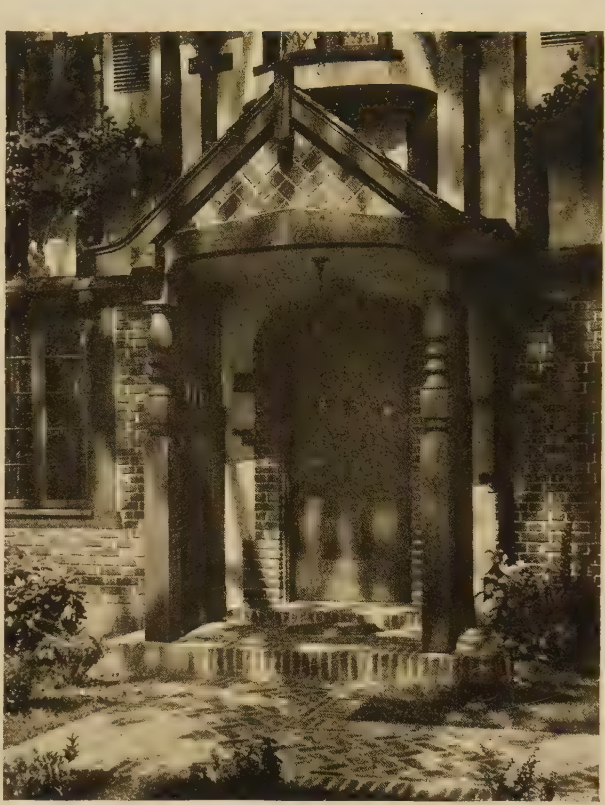
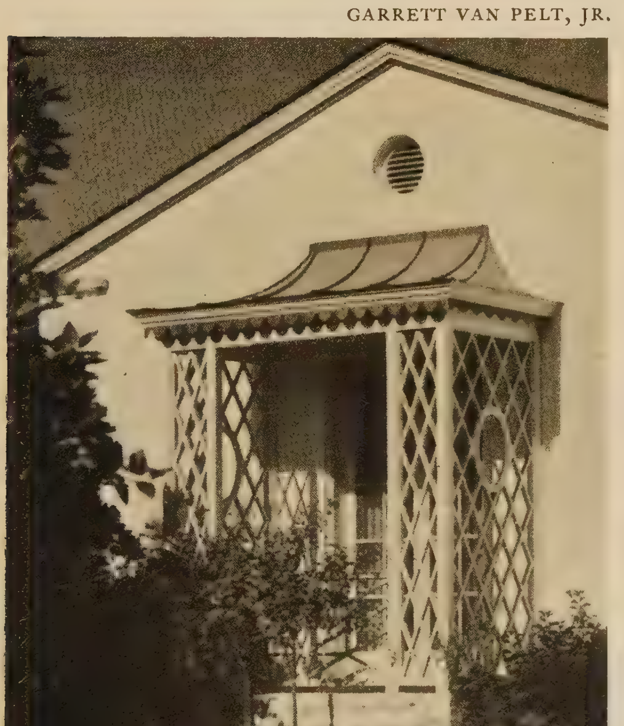


DWIGHT JAMES BAUM

GARRETT VAN PELT, JR.



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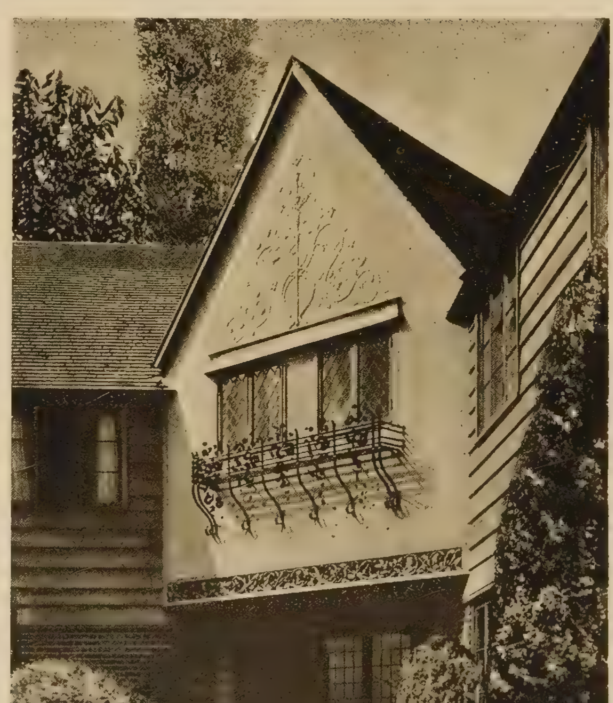

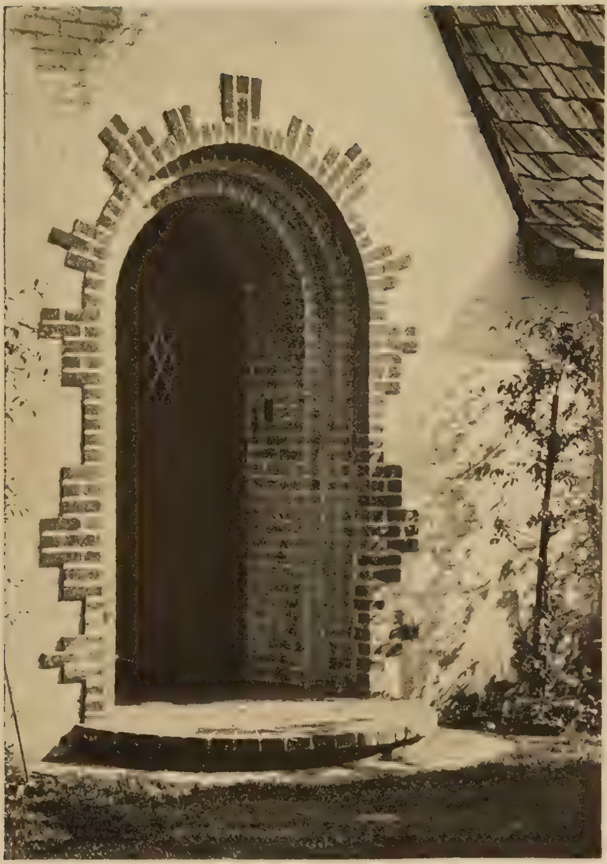

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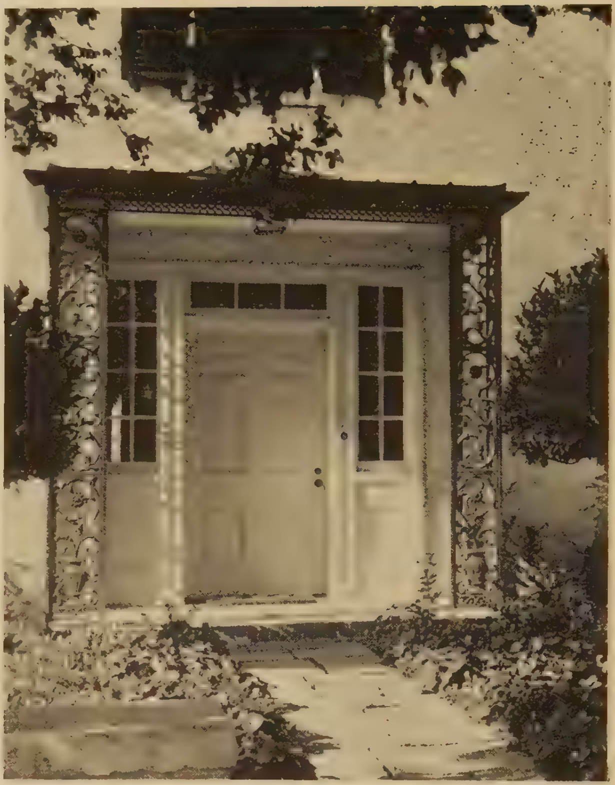

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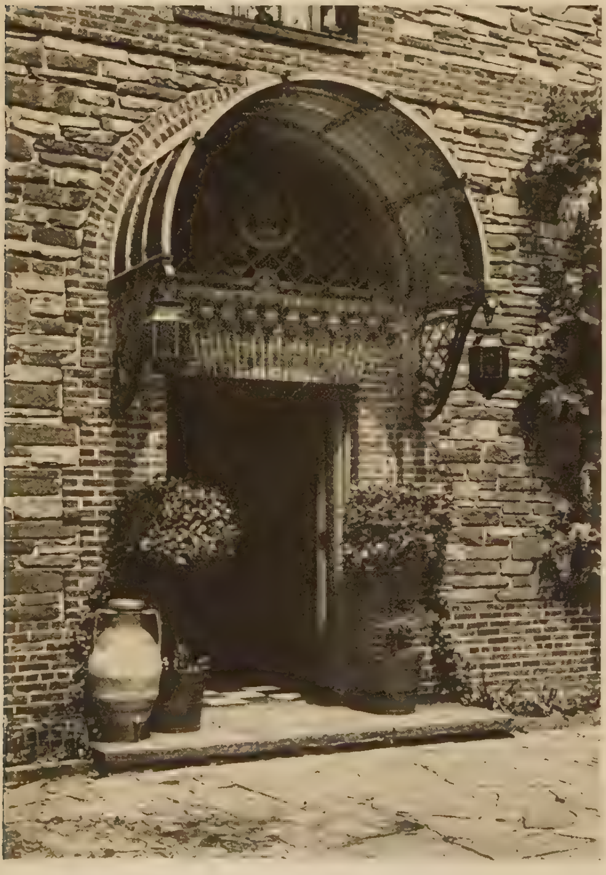
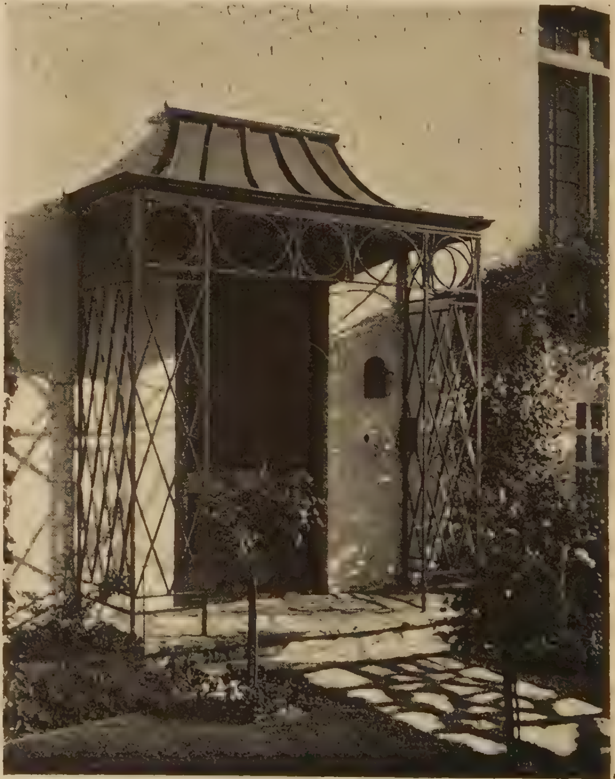
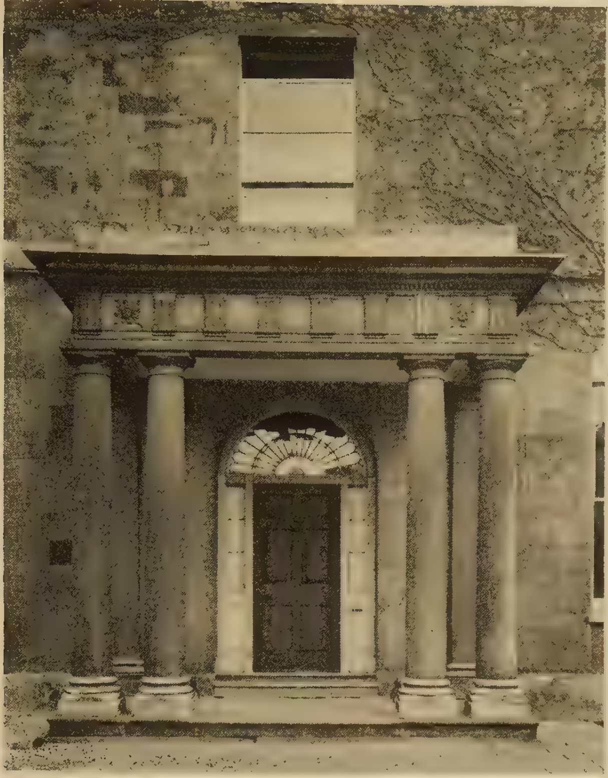


MELLOR, MEIGS & HOWE



MARSTON & MAYBURY



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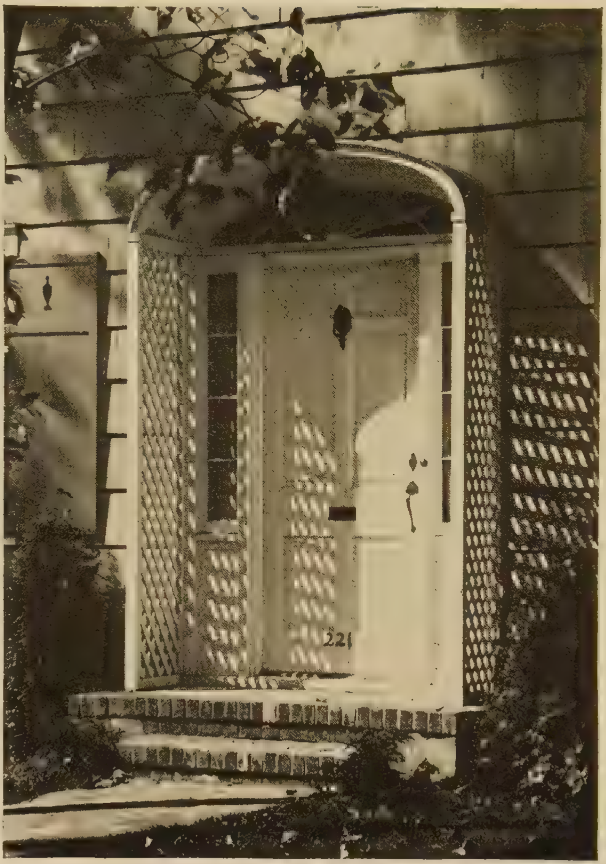
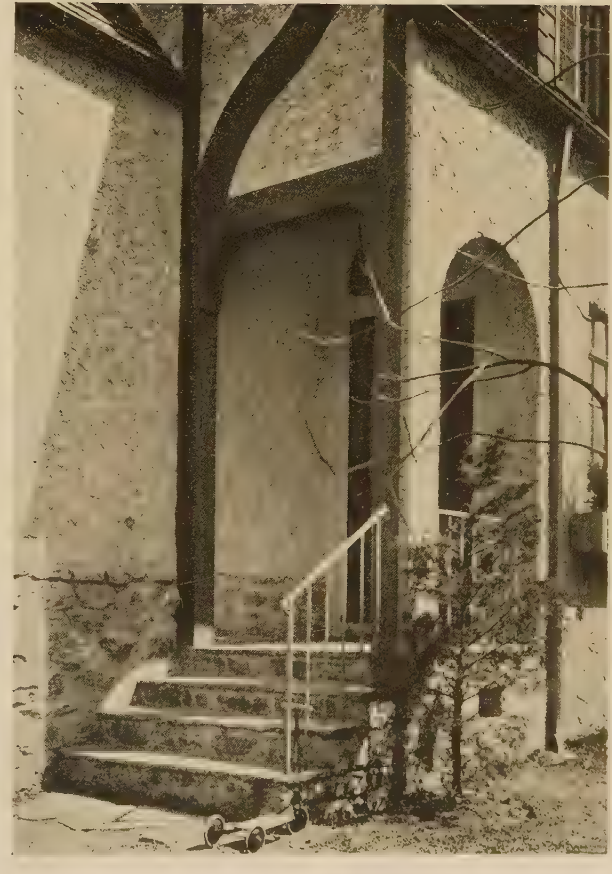
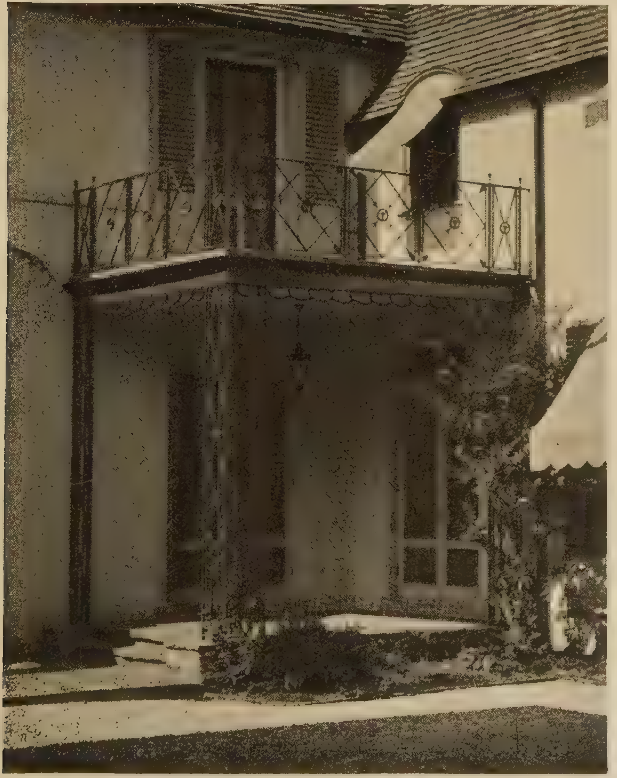


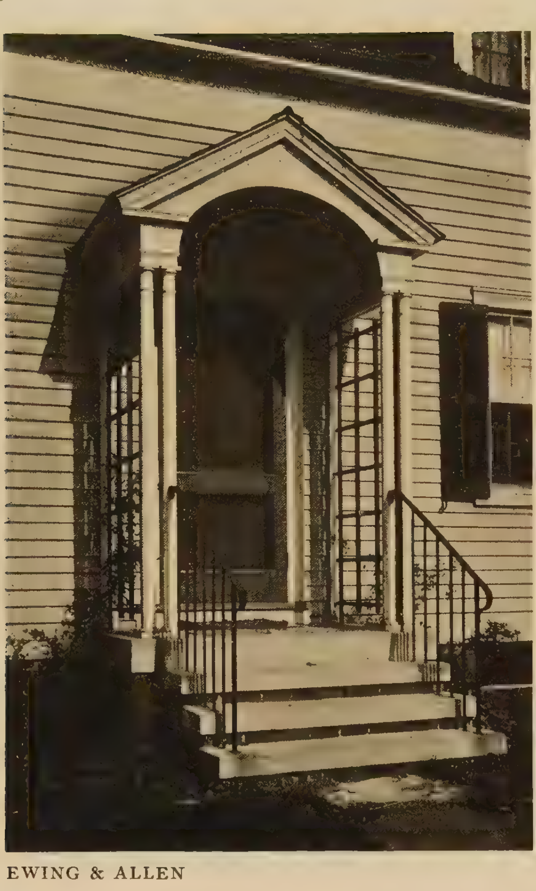
DE WITT CLINTON POND

L. S. BEARDSLEY

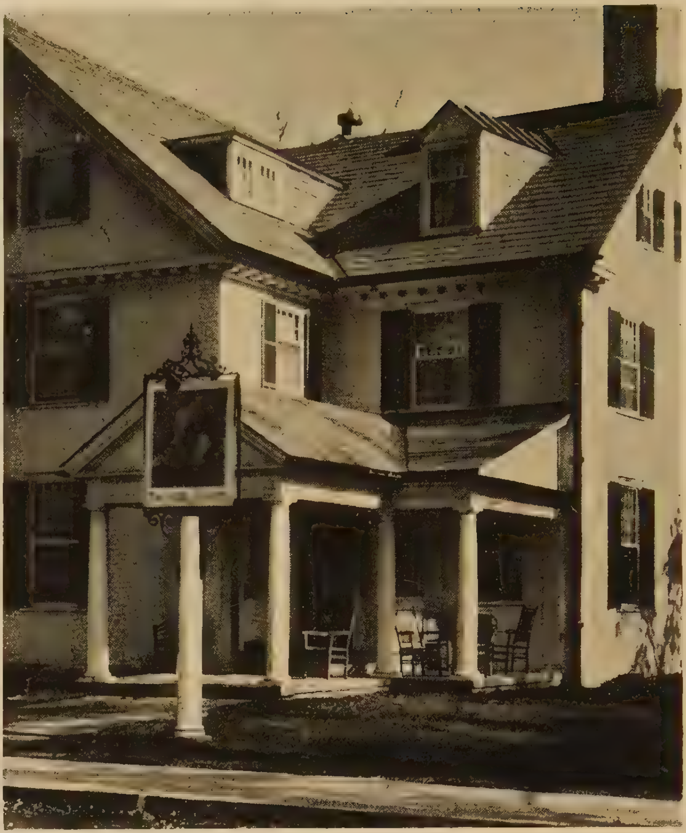


TILDEN, REGISTER & PEPPER



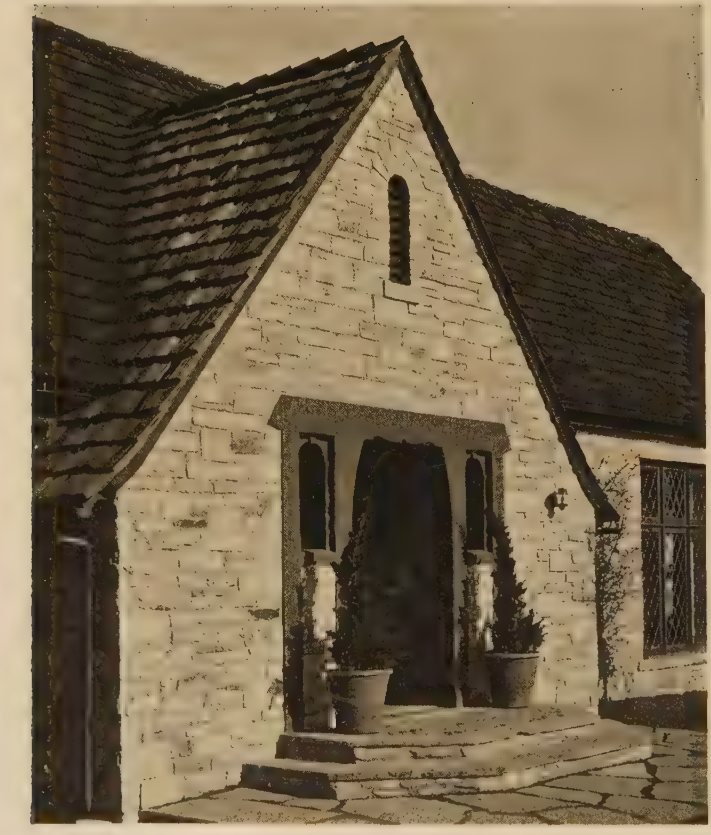


EWING & ALLEN



PUTNAM & COX

PAUL R. WILLIAMS



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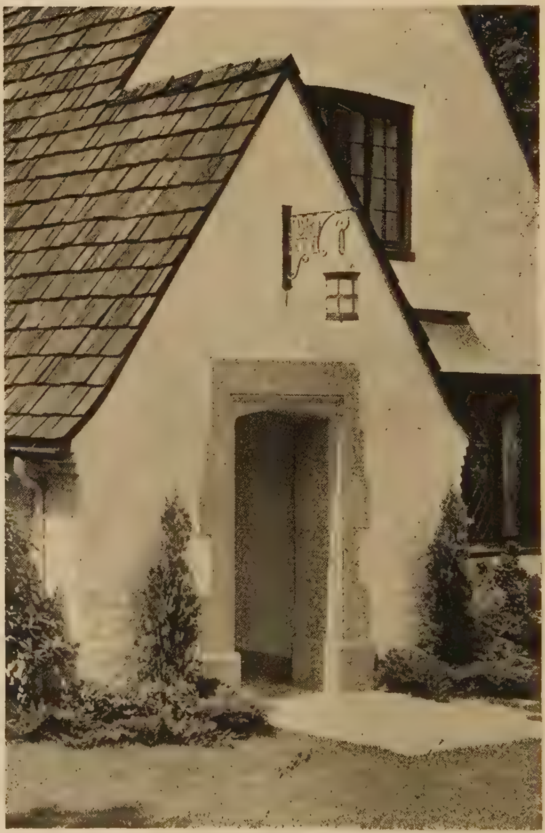
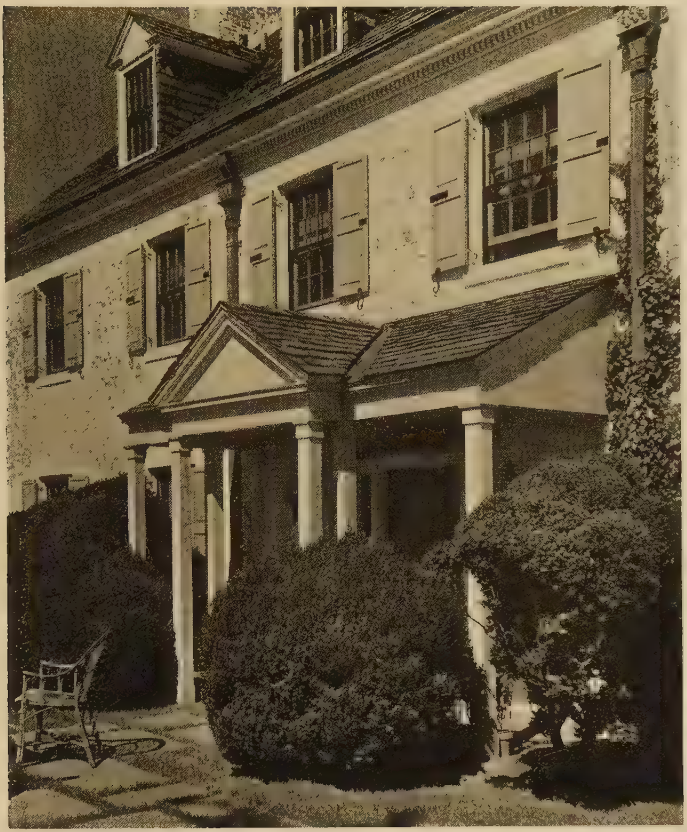
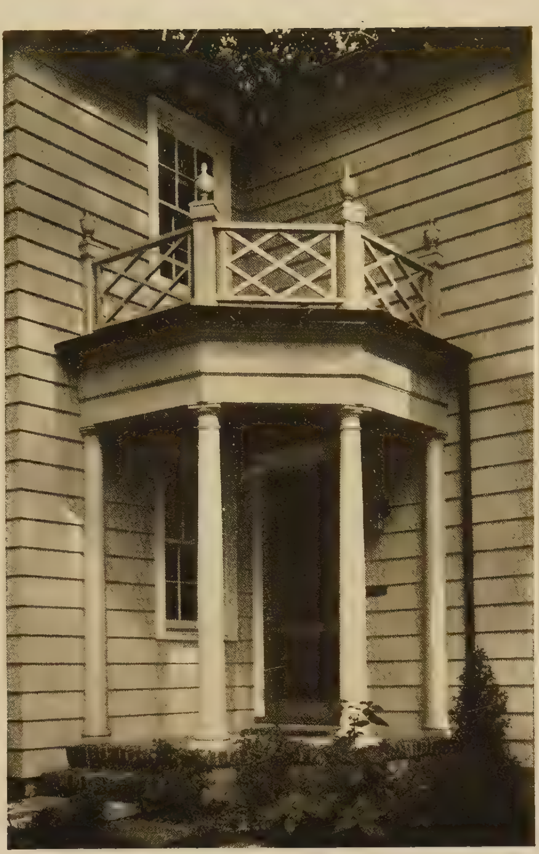


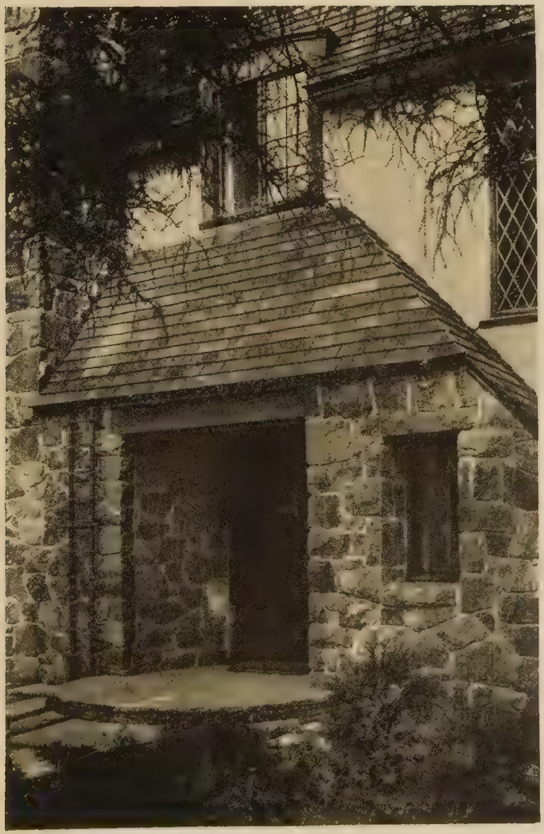


JAMES WM. O'CONNOR



DE WITT CLINTON POND

TOOKER & MARSH



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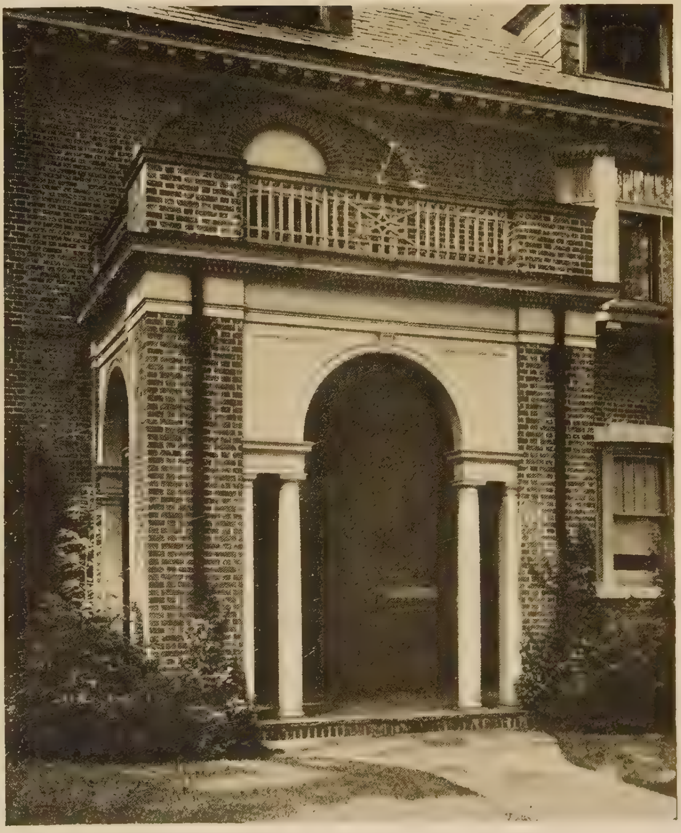
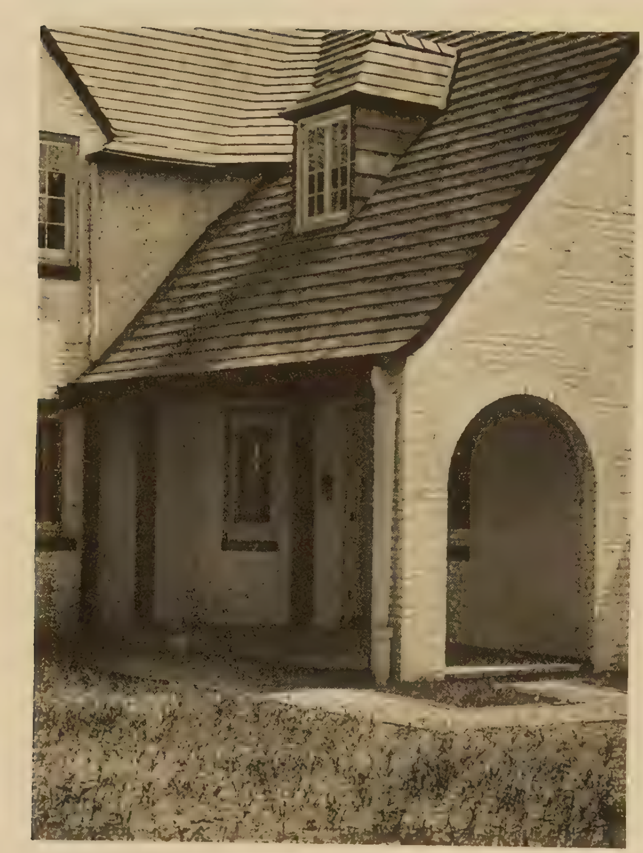
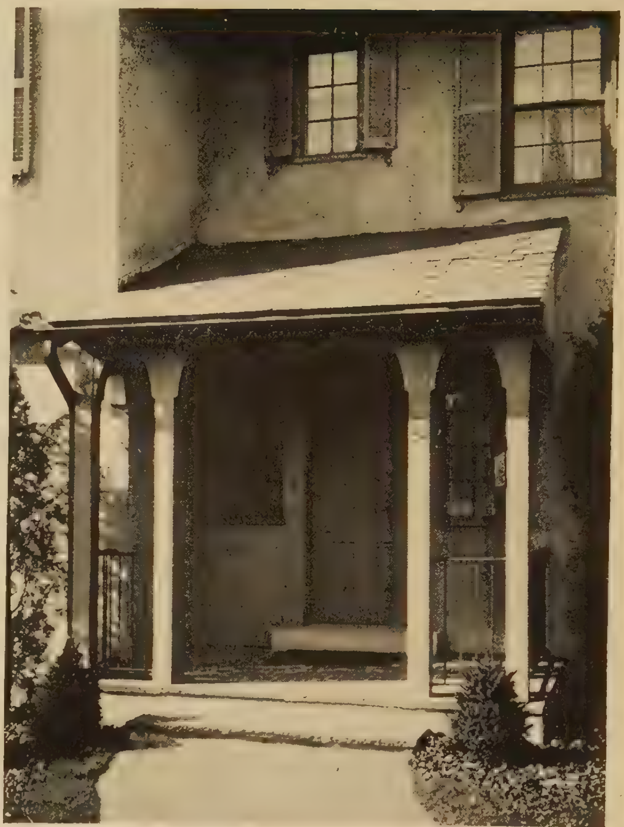




ROBERT McGOODWIN



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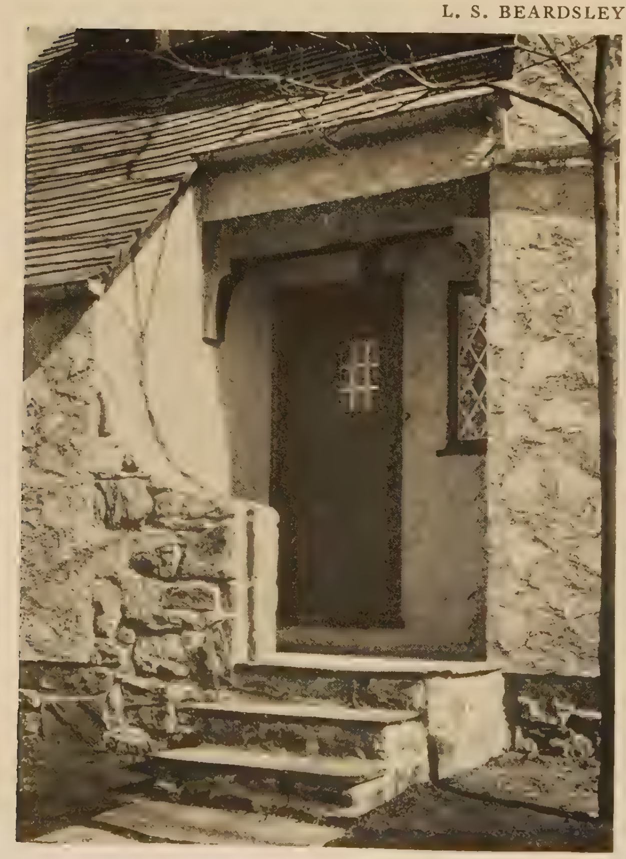

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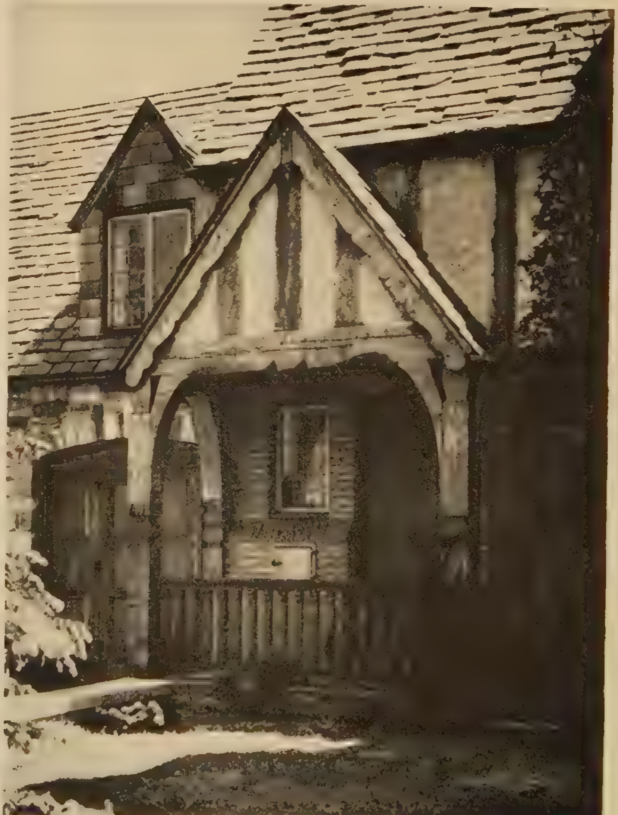

CONTACTS

DEVOTED TO A BETTER UNDERSTANDING OF THE BUSINESS SIDE
OF ARCHITECTURE AND ITS RELATION TO THE INDUSTRIES

Facts that Show the Business Trend

By Julius H. Barnes

Chairman, National Business Survey Conference

COMPREHENSIVE and detailed reports obtained by the National Business Survey Conference from virtually every important line of business and industry in the United States make it possible to draw a fairly accurate picture of the business situation as it is now four months after last fall's security decline.

In many instances the reports deal with existing conditions as compared with the end of the year 1929. They also show to a considerable extent conditions as contrasted with a year ago, and some of them provide data for a range of years. They indicate both strong and weak spots, and show clearly the inter-relation of all industry.

The reports from the various industries indicate that the importance laid upon construction as an influence in restoring industrial balance has not been over-emphasized. They show that for a revival of construction in its manifold forms a first requirement is adequate and reasonably priced credit.

Without presuming to draw conclusions we submit the essentials of the reports for the information of business men.

Since finance is of such importance, we summarize its various reports first.

Long Term Credit.—January and February bond issues were 33 per cent larger than the same period last year. Bond prices formerly tending downward have turned upward in these last few weeks. Interest rates on standard issues continue lower than a year ago with indications of further softening. In general, there is an increase in funds available for both long and short time securities.

Short Term Credit.—Customers' rates at their banks have shown a declining tendency. In addition, acceptance rates, call rates, and time money rates have all declined and are now substantially lower than last year, some rates marking the low points for several years. There is evidence that the general easing of bank credits is reaching the smaller centres. After downward tendency for some months, total bank loans are increasing, showing funds going into use.

Bank Debits.—Excluding New York City with its large security transactions, this indicator of business turnover is now slightly less than the weekly average of last year and slightly greater than the first quarter of 1928, with the seasonal decline this year less than the seasonal decline last year.

Savings.—New York savings bank deposits since the first of the year show steady net increase, substantially greater than last year's corresponding months. Elsewhere some districts show moderate increases over last year and others slight losses.

Life Insurance.—New February business at $1,003,000,000 exceeded February, 1929, by 3 per cent.

Building and Loan Associations.—In most sections a marked increase in receipts in comparison with closing months of 1929 is seen. Some associations have begun actively to solicit applications for home construction and for modernization.

Mortgages.—Farm loans report slight increase with marked decrease in delinquencies and foreclosures as compared with last year and the previous year. Funds for good farm loans seem reasonably available. City mortgages show smaller volume than last year and year before with a small increase in delinquencies and foreclosures. Adequate funds are reported available for conservative new loans.

Installment Finance.—Reports indicate installment sales approximately equal to last year with no marked increase in delinquencies.

New Construction and Other Capital Expenditures.—Upon the basis of progress already made this year, and more matured plans of the various fields of business, it is now possible to restate in larger totals earlier estimates of probable expenditures in 1930 for equipment and new construction. Utilities of all kinds contemplate such expenditures this year to an aggregate of $3,250,000,000, as against $2,863,000,000 last year.

Other private construction in all of its forms, it now seems probable, will reach at least as large an amount as last year.

The Construction Industries.—There are continued signs of improvement, except in residential building, which still drags. Contracts awarded in the week ending March 14 totalled $105,000,000, the highest weekly figure in eight weeks. February permits for additions, alterations, and repairs in 279 cities show a decided increase in numbers over January, but a smaller total value.

Awards for concrete pavements for January and February and for state and county roads exceed last year by 82 per cent and are 40 per cent above 1928. Shipments of Portland cement this February were the largest of any February in the last four years.

The crushed stone industry, usually dormant until mid April, expects this year's business to prove 10 per cent above normal and above last year. Shipments of stone, sand, and gravel are increasing slowly.

Common brick has had a very dull three months.

The slate industry finds orders light and prices lower, but expects better conditions in the latter half of the year.

Lime for construction purposes indicates 40 per cent below normal, while for agricultural and chemical use it is 10 to 15 per cent over last year. Manufacturers expect improvement with the construction season.

Plate glass manufacturers report conditions quiet, but improving.

Window glass is 10 to 20 per cent below last year.

Paint sales are lower, but manufacturers expect the usual improvement which places half their year's business in the second quarter.

The price index of building materials indicates unchanged prices for structural steel, common brick, hollow tile, sand, gravel, and crushed stone, with small increases for cement and lumber.

Lumber manufacture shows a decline of 13 per cent for the first ten weeks of the year, compared with last year, and shipments are 12 per cent below last year. The rate of shipments recently shows improvement. The lumber industry relies upon an enlarged building programme and expects for the year a larger volume than in 1928 or 1929.

Transportation.—The programme contemplating total expenditures in 1930 for equipment and improvements of $1,050,000,000 is obviously well under way. Car loadings, so far this year, are about 6 per cent off as compared with last year, but the loadings of package freight—so-called less-than-carload freight—representing merchandise moving into consumption, show only about 3 per cent under last year, with the seasonal increase since the first of the year in the same ratio as the seasonal increase last year.

Electric Railways.—Capital expenditures of $147,000,000 are contemplated in 1930, against $103,000,000 last year and reports indicate this programme is well forward.

Shipping and Ship Building.—Shipping trades report falling off in tonnage carried.

Telegraph and Cable.—Domestic telegraph business since January 1 has averaged ½ per cent below last year, against an expected 4 per cent increase. Cable and overseas radio business has not been as good as last year, due in part to cable breaks.

Telephone.—Construction expenditures in January were 25 per cent in excess of corresponding expenditures in January, 1929. There has been a good start on the capital expenditure programme of $700,000,000, comparing with $633,000,000 total for 1929.

Radio.—Radio tube sales were 12 per cent less in January and February as compared with last year. New set sales for January and February were 12 per cent more than in November and December and compare favorably with one year ago.

Power.—The electric light and power utilities plan for 1930 total capital expenditures of $865,000,000, an increase of $65,000,000 over last year. The first quarter contracts indicate good progress in carrying this out. Electricity produced the first half of March exceeds the same period last year by about 2 per cent. The gas companies construction programme of $400,000,000 is proceeding, and with the portion allocated to the first quarter likely to be exceeded will equal or exceed 1929.

Gasoline.—Stocks of gasoline on March 8 equalled 53 days' supply, and have led to a suggestion of the Federal Oil Conservation Board that the refining industry reduce operations to a six-day basis.

Coal.—Anthracite production has averaged about 5 per cent below last year, weather conditions being moderate. Bituminous coal production has fallen below last year.

Manufacture.—The iron and steel industry for the third week in March operated at 75 per cent against 94 per cent in last year's high activity. Indications are for an increase in production. Structural steel orders are about 4 per cent under 1929. Rail mills are operating at capacity. Tinplate mills at 85 per cent. Some line pipe business is in contemplation. Steel industry still feels a smaller automobile production. Increased structural steel orders are expected to sustain or perhaps increase present rate of activity.

February production of 359,000 automobiles would indicate on average seasonal trends a 1930 production of about 4,600,000 cars. Current reports indicate increasing production. Dealers' new car stocks are reported low. February payrolls exceeded January by 25 per cent.

The farm implement industry reports some curtailment.

Machinery sales are normal. Inquiries in good volume, but there is some hesitancy about placing new orders. Machine tool orders continue lower and payroll indices in this field showing 16 per cent below last year's good figure. Activities in construction machinery are equal to 1928 and are 12 per cent below 1929. The heavy machinery industry is doing well, being almost up to 1929 record.

The general volume of chemical activities is unsatisfactory, although February fertilizer sales in the Southern States were 31 per cent greater than last year. The paint, varnish, and lacquer industries have moderately receded.

Spring demand for electrical equipment has developed. Some large manufacturers report orders substantially ahead of last year's figure to date. Some branches report conditions moderately below last year's average. The export market is reported favorable.

January and February consumption of leather and leather products was subnormal, with price declines reported.

The low point in hardware was reached in February with a turn for improvement in the first week in March. Average plant activity has been four days a week. Payroll indices were 15 per cent under February a year ago.

Cotton takings in February were 17 per cent under February, 1929. February payroll totals in production of cotton cloth were 15 per cent under February, 1929. January takings of wool were 11,000,000 pounds less than in January, 1929, with February showing some improvement. February payroll totals for wool and worsted goods were 19 per cent under February, 1929. Raw silk consumption in February was about 4 per cent less than in January, but about 8 per cent above February, 1929. Carpet and rug production was 12 per cent less than in the corresponding period in 1929.

Retail and Wholesale Trade.—Practically all lines report cautious buying. Stocks of merchandise were relatively low. Consumer buying shows little appreciable curtailment.